

Healthy Lifestyles for Communities

Breakout session, 9 am on adults
Breakout session, 10:40 am on children
Breakout session, 1:30 on teens

March, 2007

Simple Gifts To Build A Future for Ourselves and Children



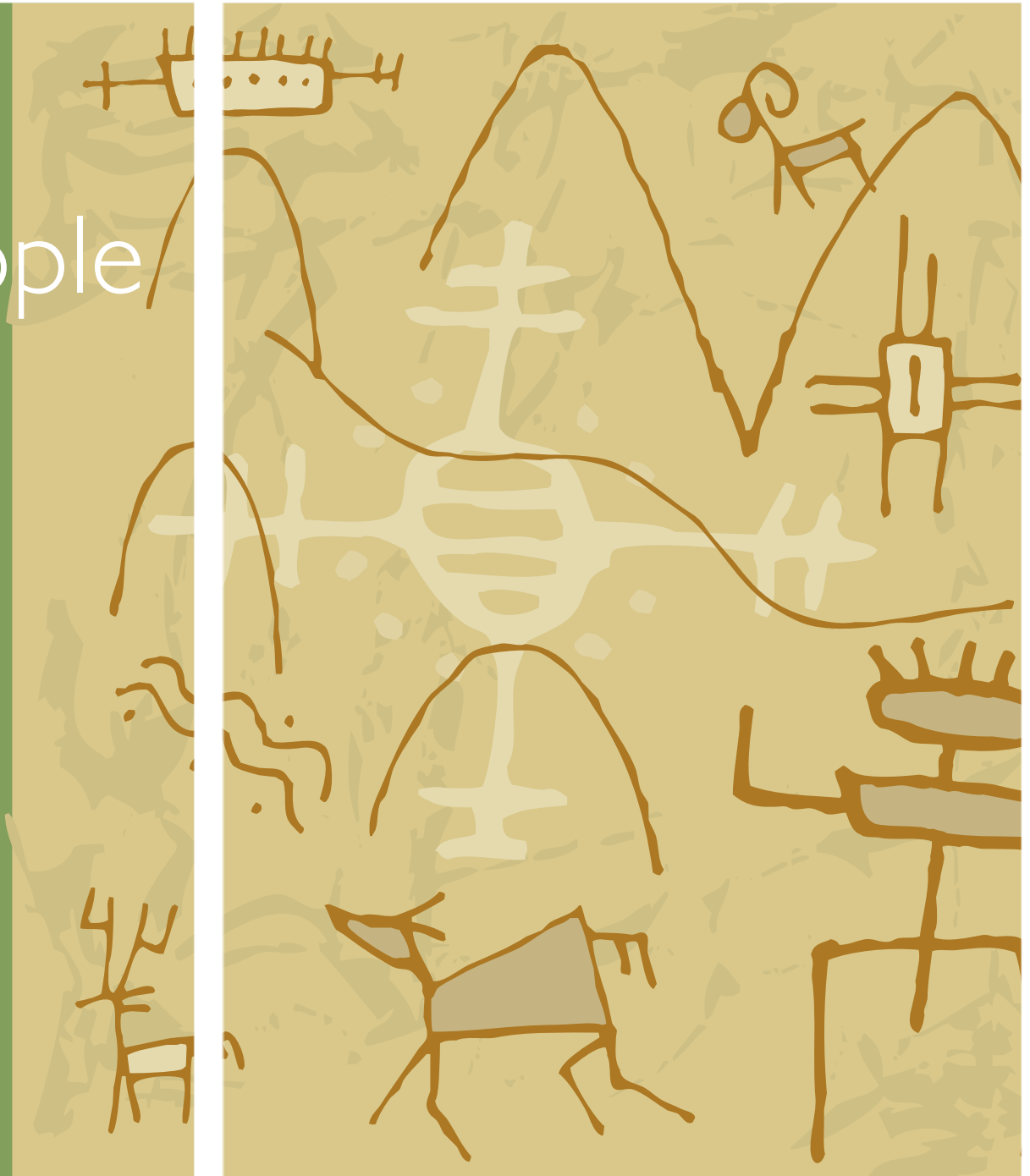
Dennis D. Embry, Ph.D.
PAXIS Institute;

Johns Hopkins
Center on
Prevention & Early
Intervention; and

National Center on
Early Adolescence,
Eugene, OR

The first people of California

lived differently



The First People of California

ate and played differently

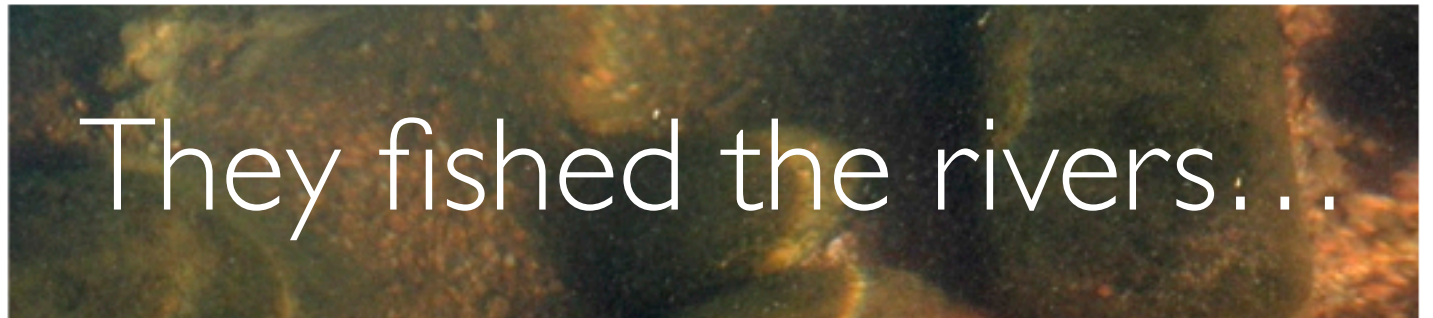


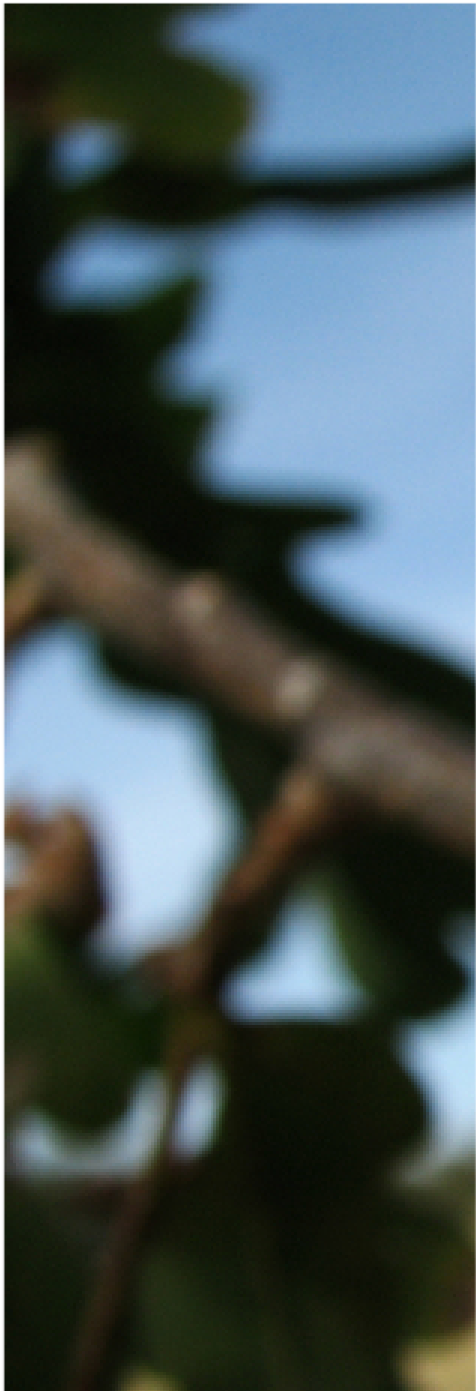


They drew from the sun and sea...

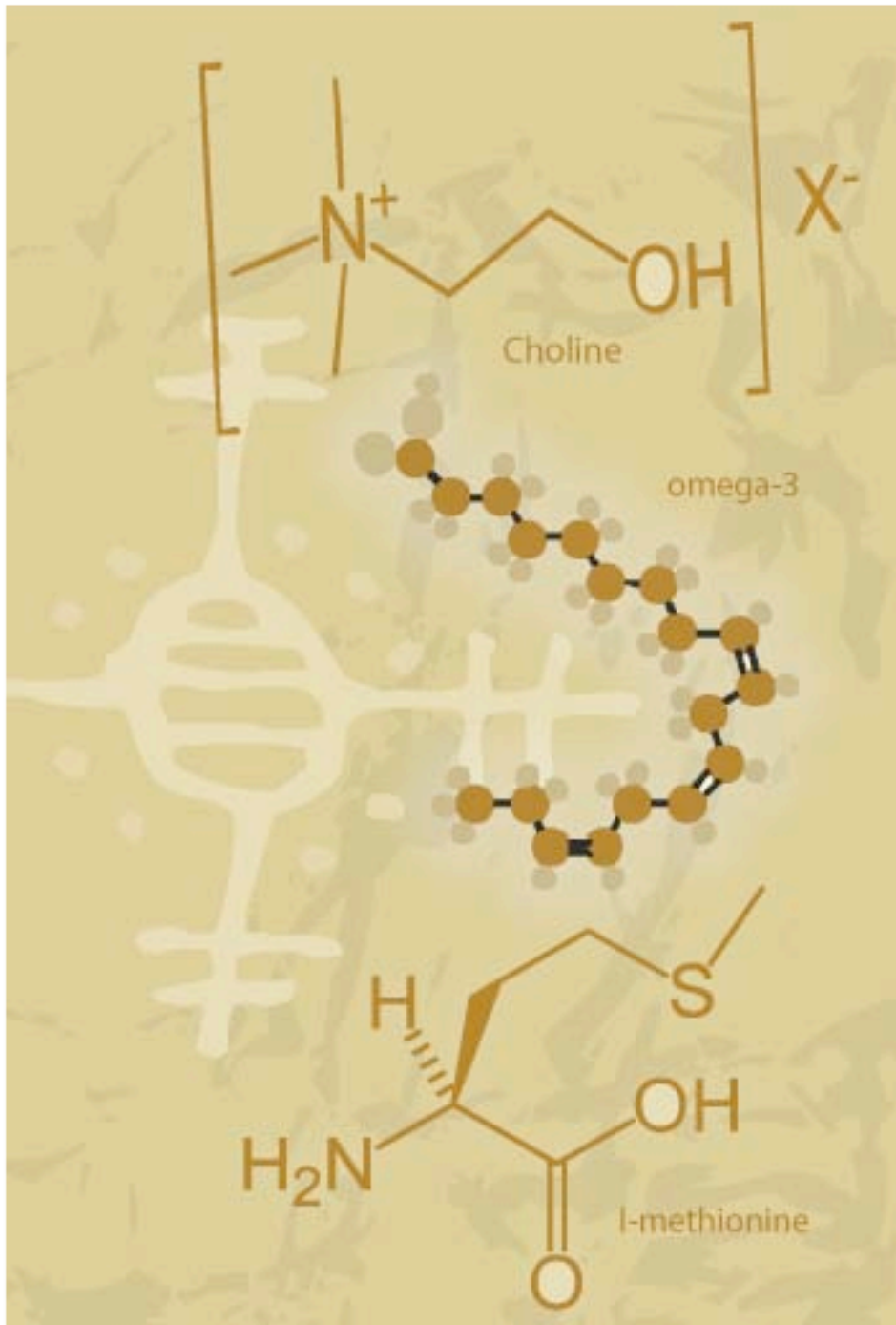


They hunted the game...





They gathered food...



Food was high
in life-giving
nutrients for
the brain, body,
and spirit

Omega-3
Folic acid
Choline
And more...



They lived differently

Children had different routines

Everything was made by members of the tribe or traded for things made by others.

Children participated in daily entertainment

Risks were taken to provide for family and clan

All had meaningful roles



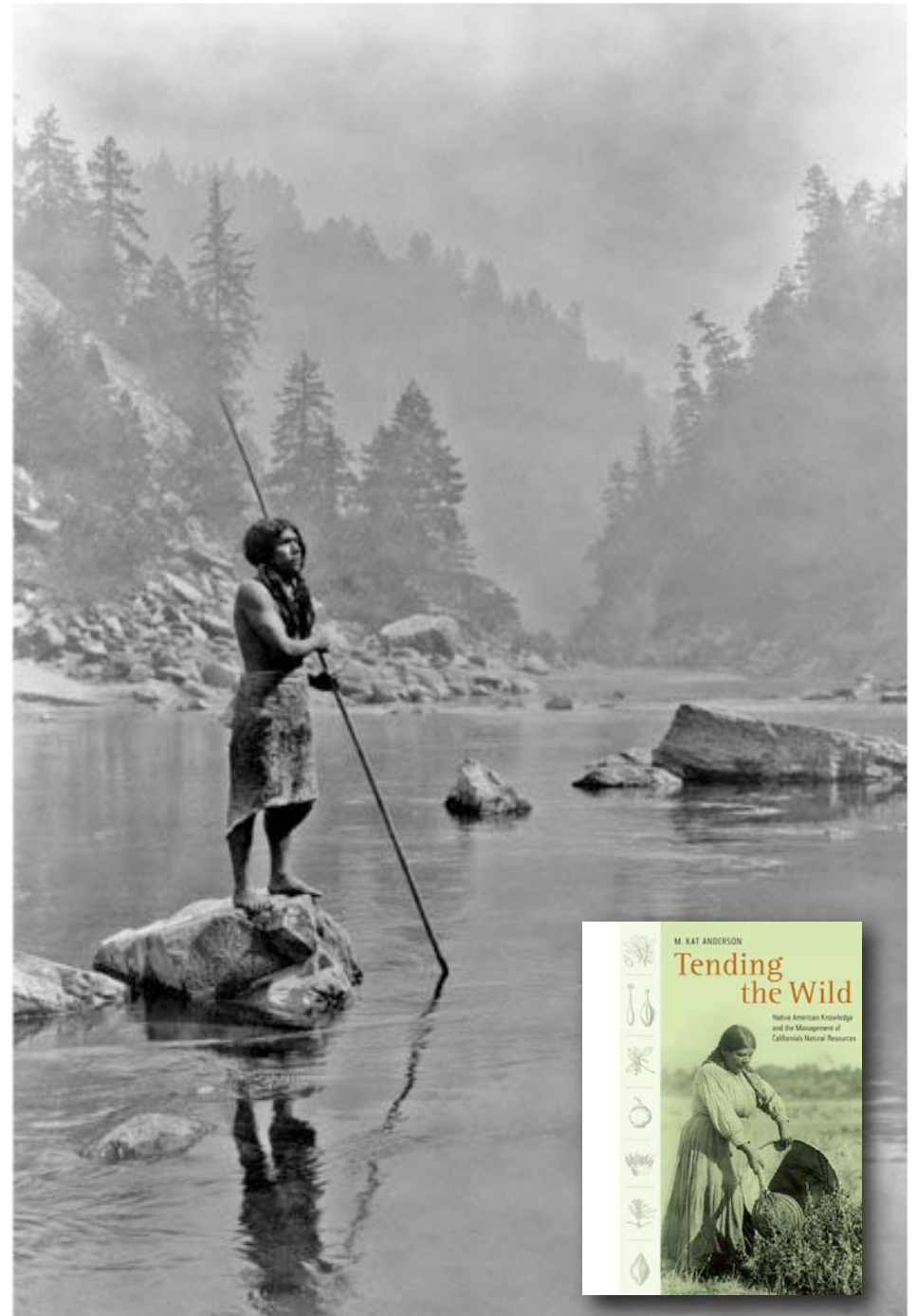


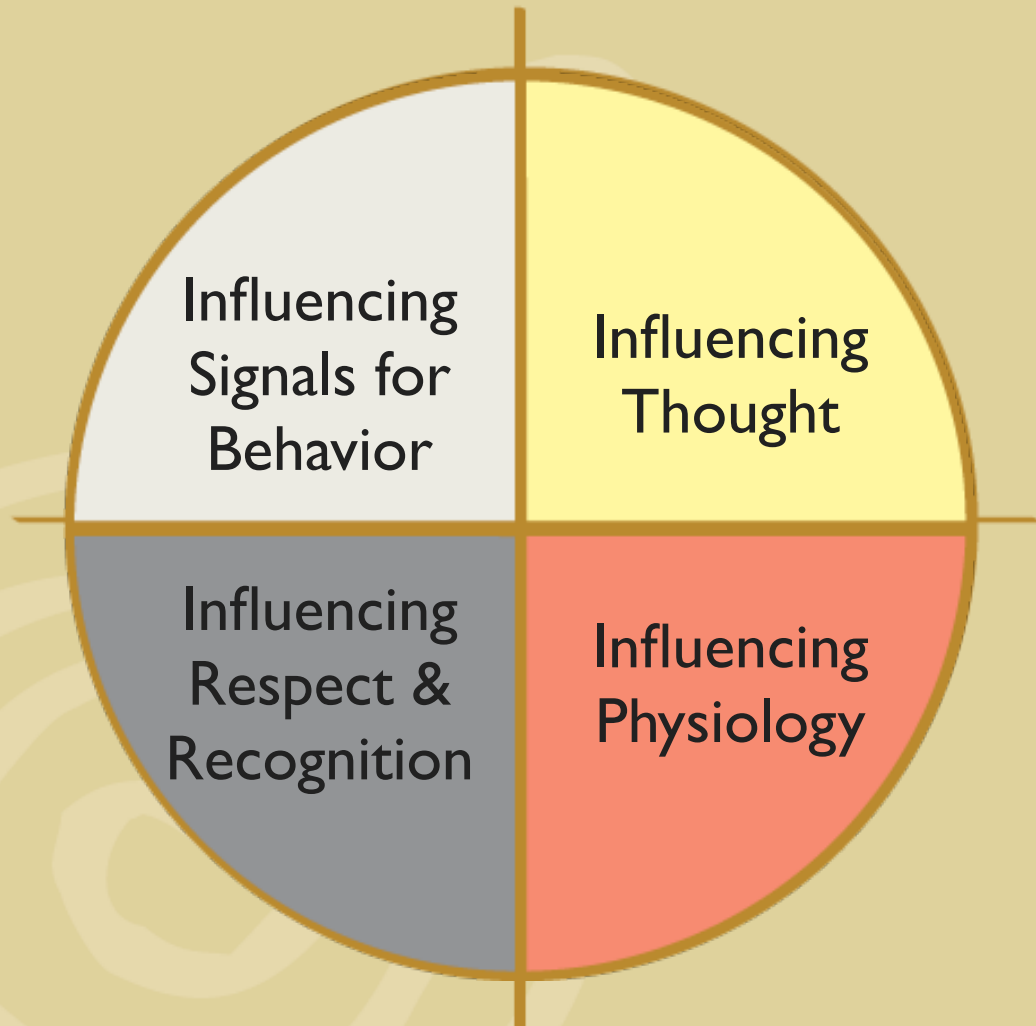
They made tools for every purpose

They were everyday scientists

They were more than hunter-gatherer stereotype.

California's indigenous people were active agents of environmental change and stewardship. using traditional ecological knowledge essential to live sustainably.





They invented ways to
influence behavior



They were adapted...

European Diseases

European Violence

Twin Traumas Struck



Dopamine
Serotonin
Adrenalin

...corrupted



The historical wound now nests
inside new insults



Some unpleasant facts

- ▶ Depression, bipolar disorder, anxiety and suicidality are increasing.
- ▶ ADHD, oppositional, and conduct disorders are increasing.
- ▶ Obesity is epidemic.
- ▶ Learning disabilities and developmental disorders are increasing.
- ▶ Inflammatory related diseases have skyrocketed—diabetes, asthma, high-blood pressure.
- ▶ Addictions remain serious problems.

Broad
epidemiological
trends are
children, teens
and adults for all
walks of life



57 Million
Adults with
Substance
Abuse or
Mental Illness

7 Million
Children
evidence one
or more
mental illnesses



9 million
teens engage in
delinquent
behavior each
year





1970



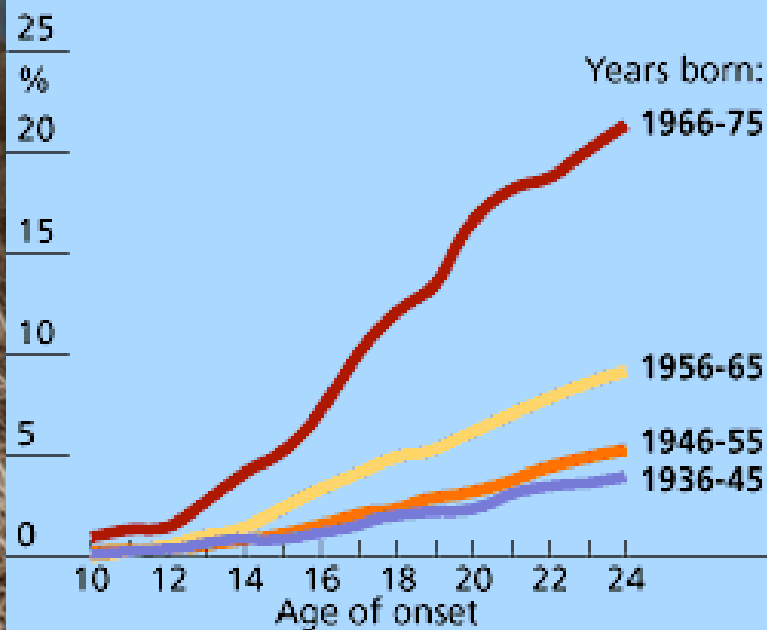
2007

Visit the School Medicine Cabinet

Depression Data

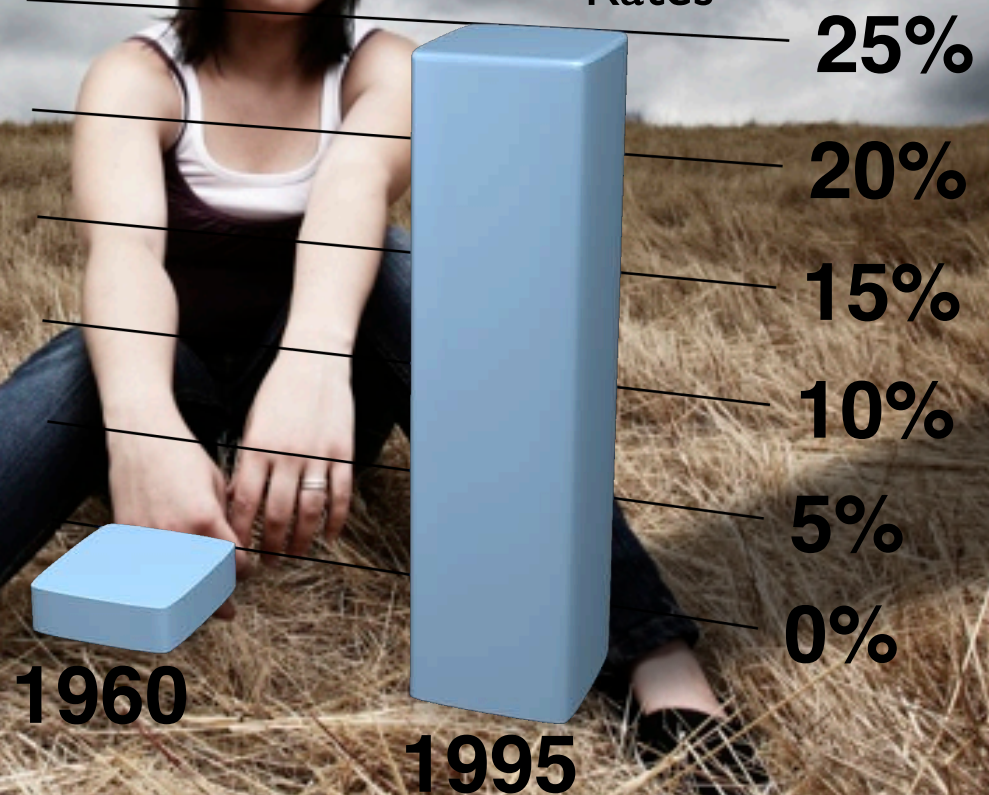
The generation gap

Lifetime prevalence, major depression
US population



Source: US National Co-morbidity Survey

Youth Depression Rates



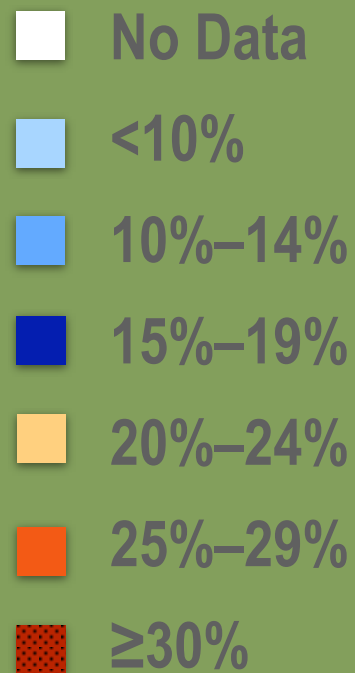
Anxiety and anxiety prescription drug abuse

WHAT THE NUMBERS SAY

High School Seniors Steadily Increase Nonmedical Use of Sedatives Over 15 Years

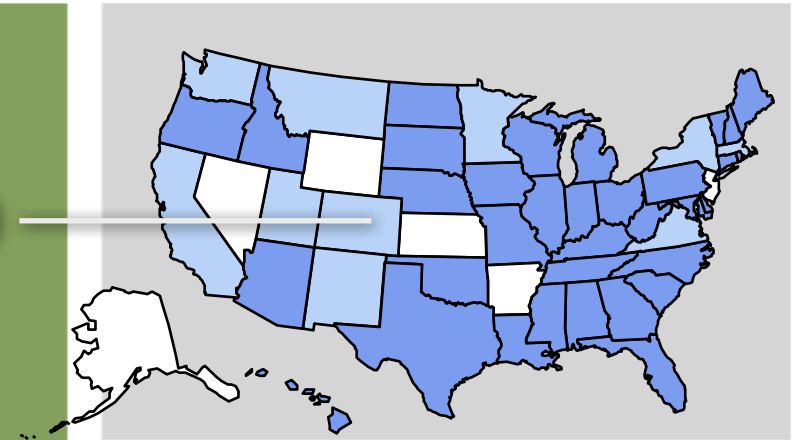


Obesity Trends* Among U.S. Adults BRFSS, 1990, 1995, 2005

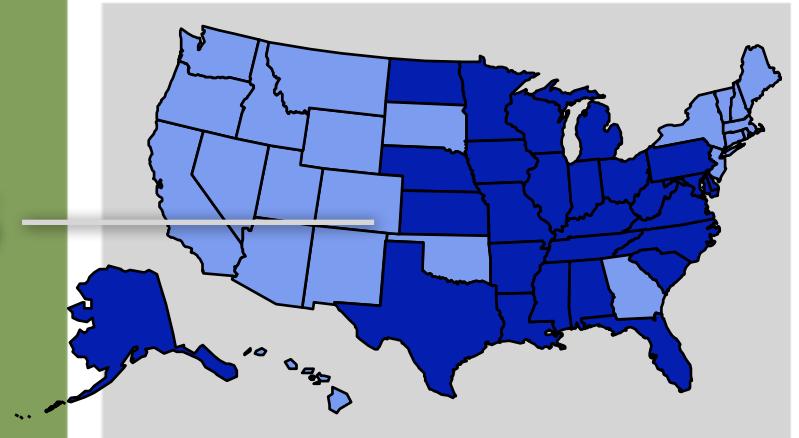


(*BMI ≥30, or about 30 lbs overweight for 5'4" person)

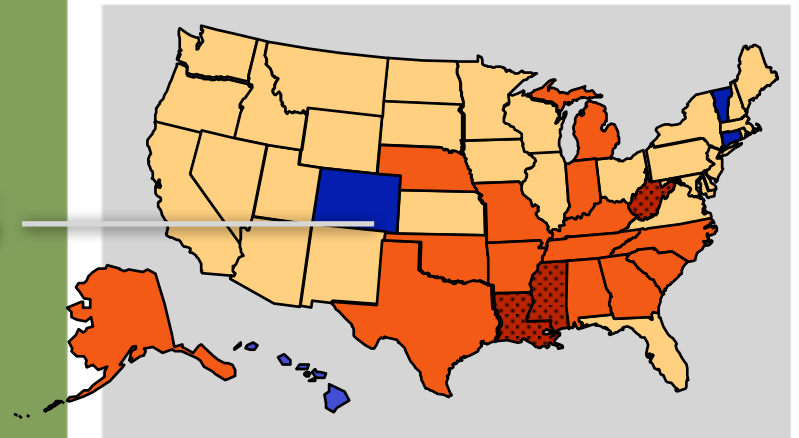
1990



1995



2005



The Medicine cabinet

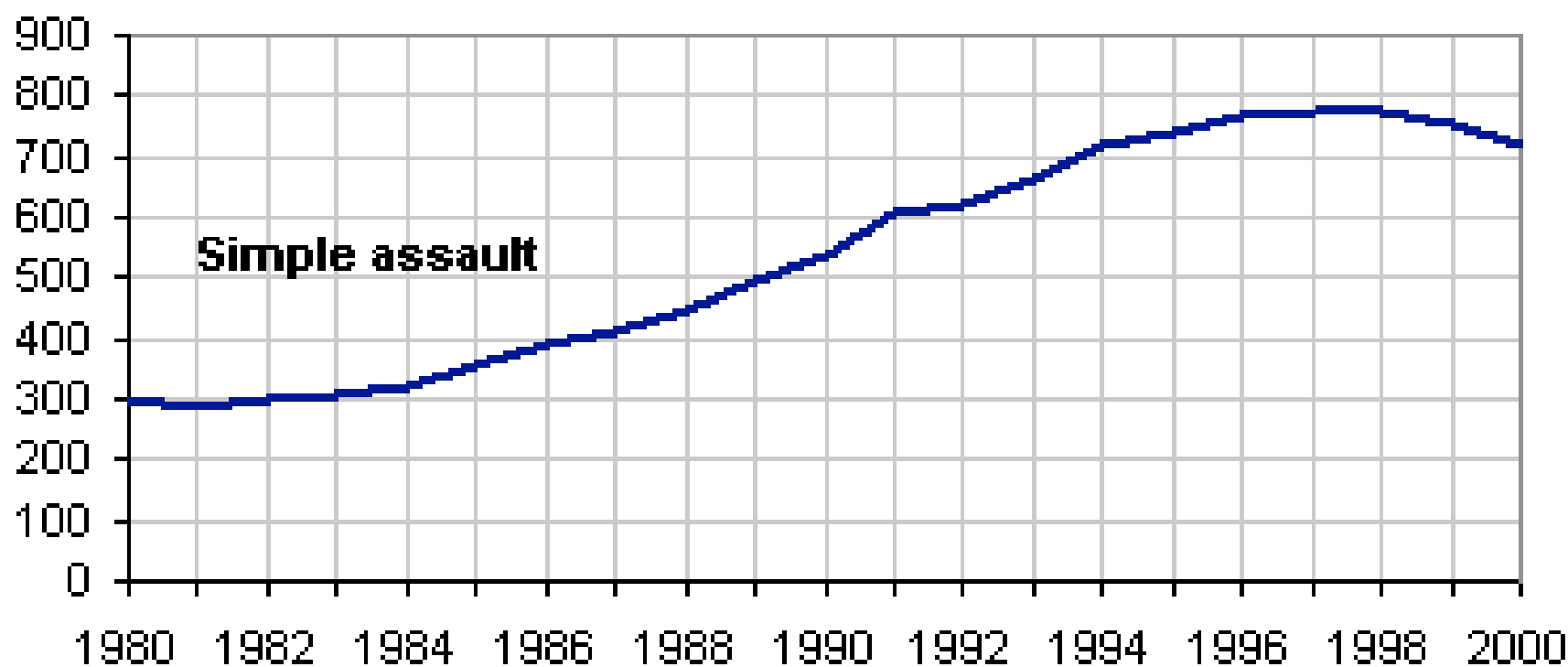
As people become obese or have mental health problems, they are many times more likely to have addictive prescription drugs at home.

More Americans are abusing controlled prescription drugs than cocaine, hallucinogens, inhalants and heroin combined.

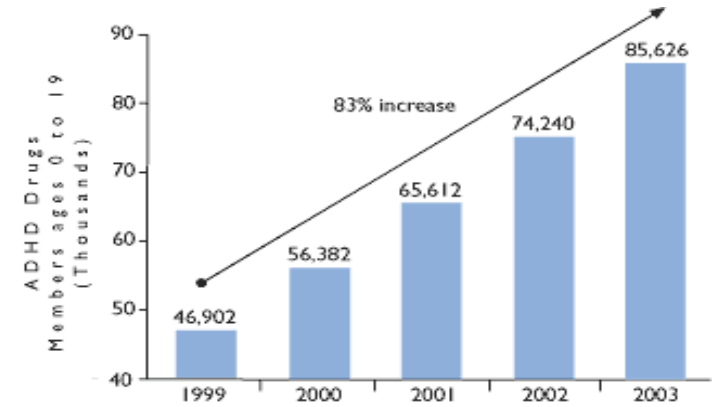


Juvenile Justice Data

Arrests per 100,000 juveniles ages 10-17

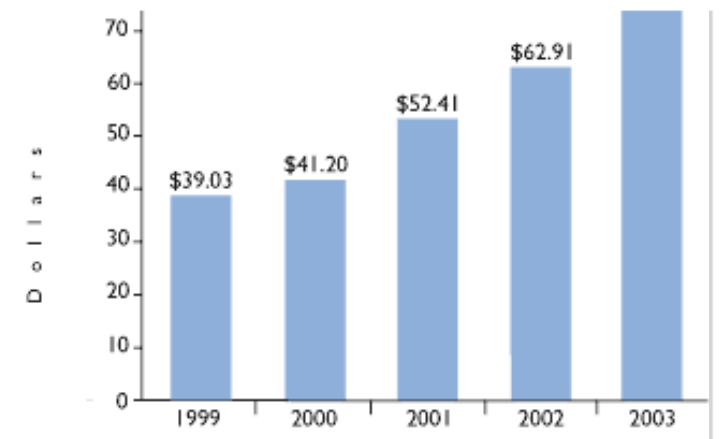
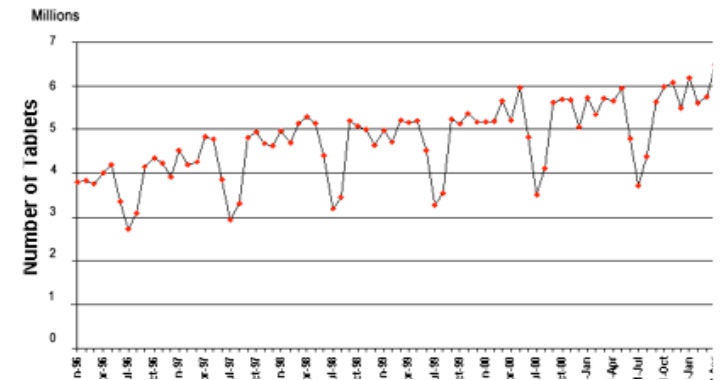


Increases in ADHD



Source: Wellmark, Inc. Claims Data, 1999-2003

Methylphenidate: Number of Tablets Dispensed From Canadian Retail Pharmacies



Proxy measures

Vicarious trauma is increasing

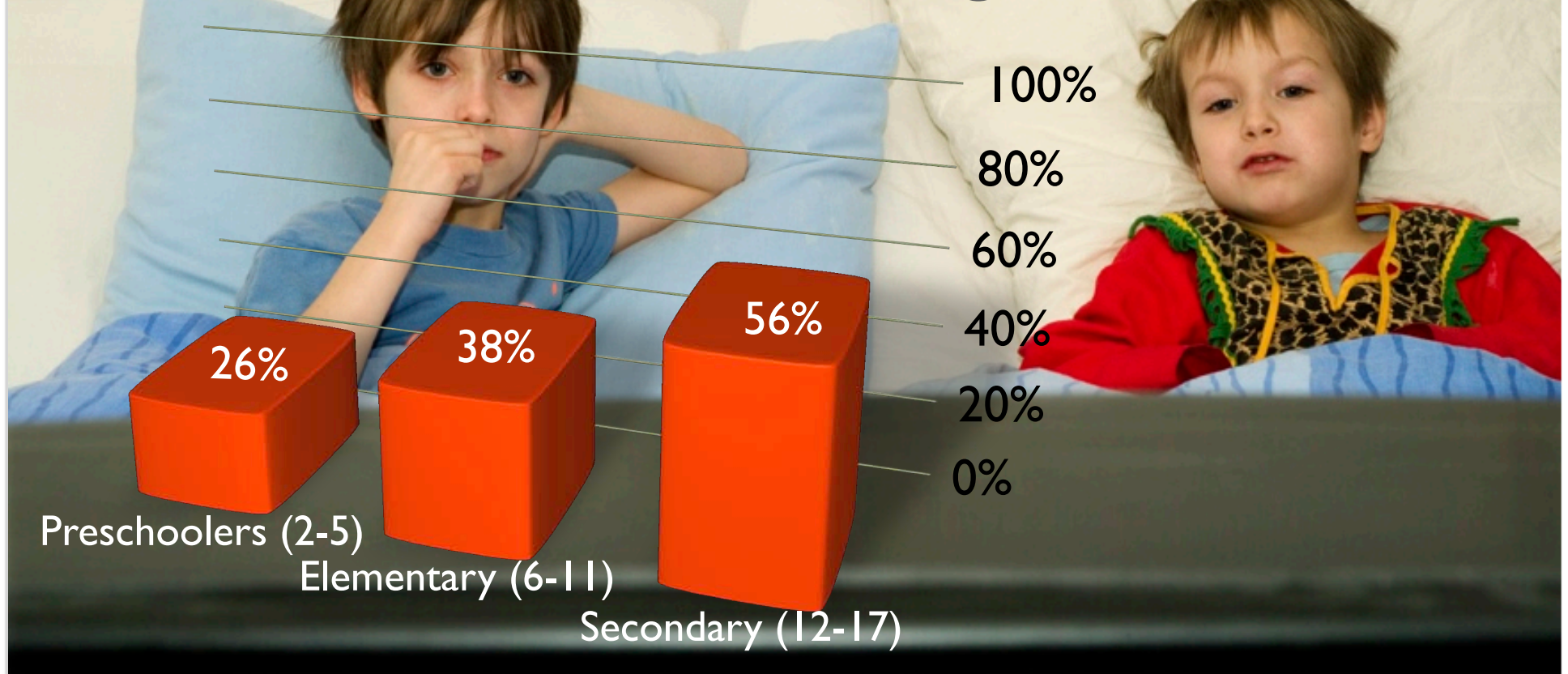
Oklahoma Bombing

9/11 Attacks in NYC

Katrina-Rita



Watching TV



What at kids doing in the bedrooms?

Strasburger, V.C. and E. Donnerstein, *Children, Adolescents, and the Media: Issues and Solutions*. Pediatrics, 1999. **103**(1): p. 129-139.



Play at home



Play at school



Touch by adults

Subtle Changes in Body, Brain &
Behavior

The impact of TV watching?

All the trends support increased youth alcohol and drug use.

Here are some of the effects...



More teen sex
resulting in
pregnancies

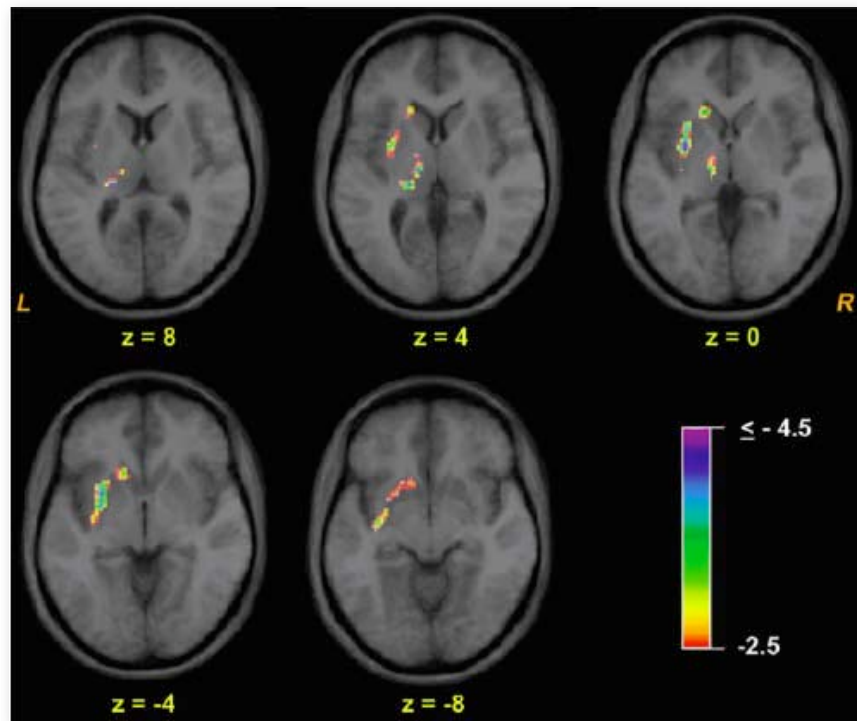


More teen drinking
and drug use

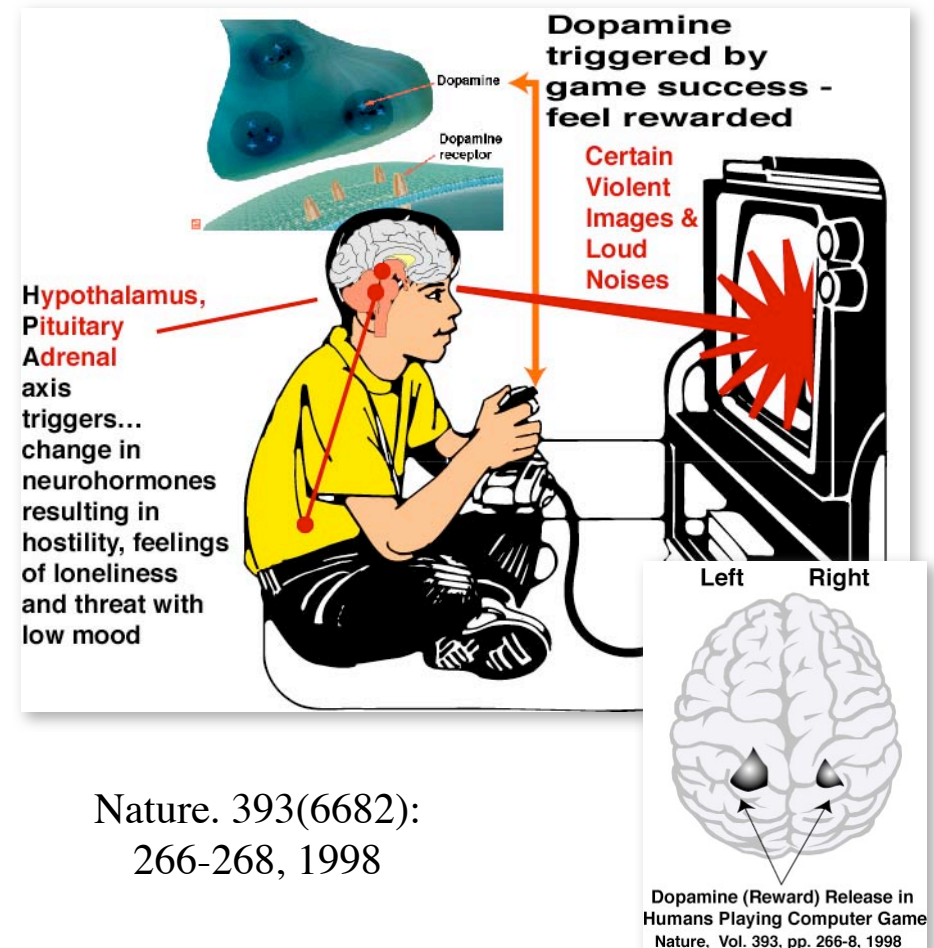


More
aggression

Brain Chemicals of Reward



The Journal of Neuroscience, April 28, 2004 •
24(17):4105– 4112



Nature. 393(6682):
266-268, 1998

Video games

Young men randomly assigned to play *Grand Theft Auto III* show greater increases in diastolic blood pressure, greater negative affect, more permissive attitudes toward using alcohol and marijuana, and more uncooperative behavior in comparison with men randomly assigned to play *The Simpsons*.

1. Brady, S.S. and K.A. Matthews, *Effects of Media Violence on Health-Related Outcomes Among Young Men*. Arch Pediatr Adolesc Med, 2006. **160** (4): p. 341-347.





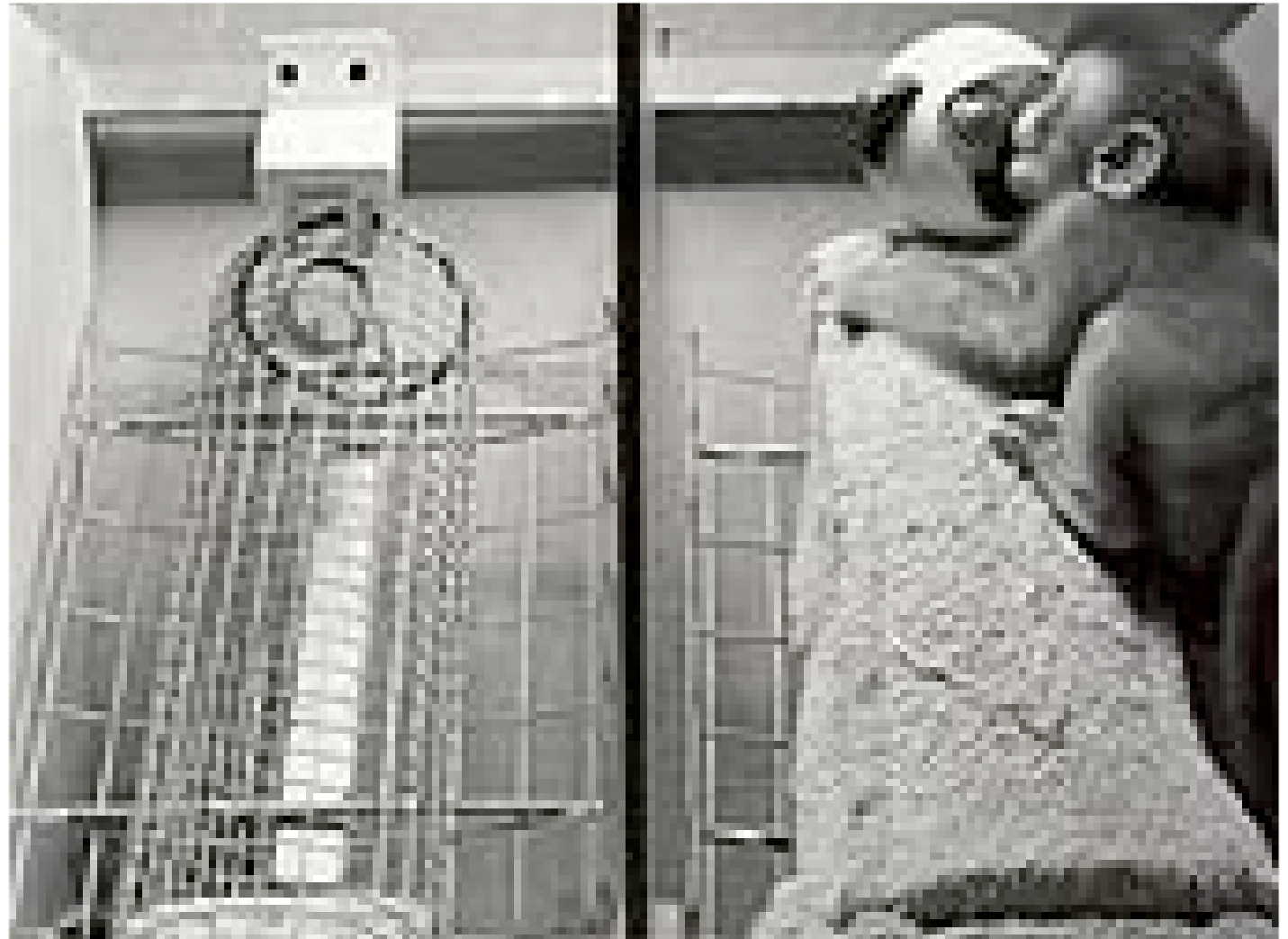
Cultural shifts in touch

During infancy

At school

In public

Daily home life



Harlow's Monkey Study



Balinese Baby



American Baby



Balinese Baby



American Baby

Observed teen touching in France and US McDonald's Restaurants



Peer – Touching	France	U.S.
Leaning	52%	20%
Stroking	26%	8%
Kissing	23%	6%
Hugging	7%	2%
Self-Touching		
Hair	21%	38%
Hands	11%	29%
Location on Body		
Head and Shoulders	45%	21%
Arms and Hands	25%	38%
Purpose of Touch		
Affection	43%	11%
Self-stimulation	8%	41%
Affect		
Facial Positive	37%	21%
Facial Negative	7%	11%
Verbal Positive	34%	23%
Verbal Negative	5%	20%
Physical Positive	62%	12%
Physical Negative	2%	16%

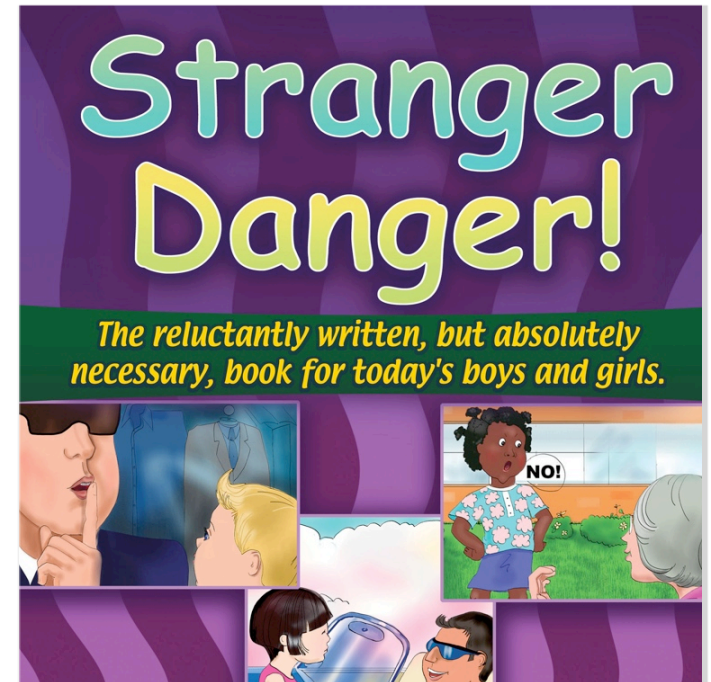
No-Touching Policies: Perceived and Real



- ▶ Relational frame that touching equals sex abuse.
- ▶ Formal and informal policies for adults and children prohibiting any touch
 - ▶ Story from New York of teacher who hugged a boy whose mother had just died
 - ▶ Story from Wichita Kansas substitute teacher contract
 - ▶ Tucson story

Prevention practices creating moral panic

- Stranger danger training tends to back fire, and most children are actually helped by strangers and harmed by people they know.
- “No Touching” policies are associated with increased aggression and bad behavior rather than less.



Children and teens have many fewer chores at home, on farms or in community

- Chores have built in accountabilities when parents are not around.
- Chores create reinforcement from adults for helping and other positive behaviors.
- Chores reduce time watching TV, playing computer games, doing drugs or alcohol, and reduce time for sex play.



“How is the homework going?”

Supervision is more difficult

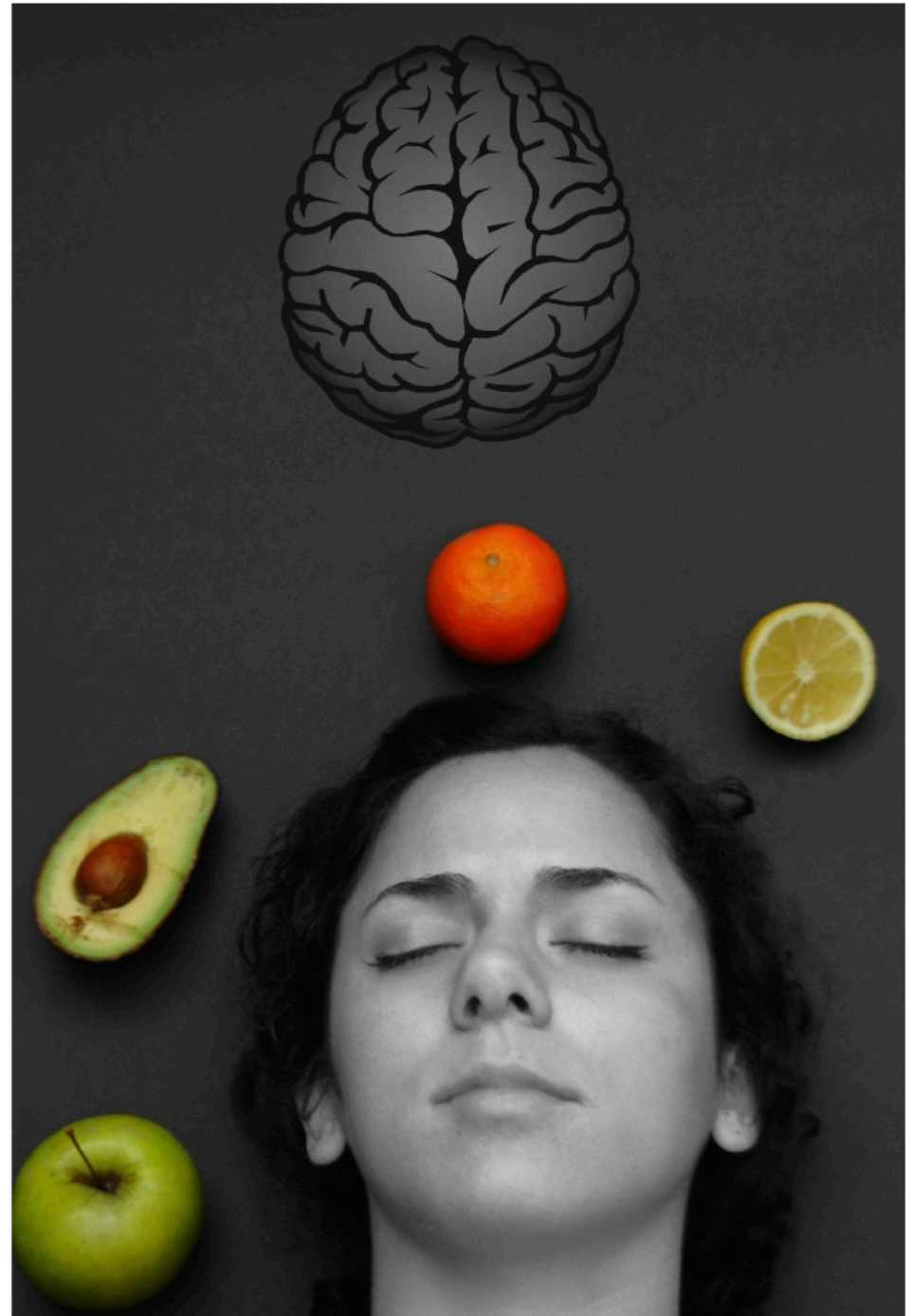
“Patty and I are doing algebra now, yuk.”

- Cellphones mean a kid can be anywhere
- Privacy regulations make it difficult to get land-line numbers of families of your kid's friends.



“Brain Food”

Diet has changed significantly in the past 50, 25 and even 10 years. These changes alter brain chemistry and contribute to many observed behavioral trends of depression, bipolar disorder, autism, violence and academic problems. Most people are not aware of these data.





Omega 6

(e.g., soybean, corn, cotton seed oil)

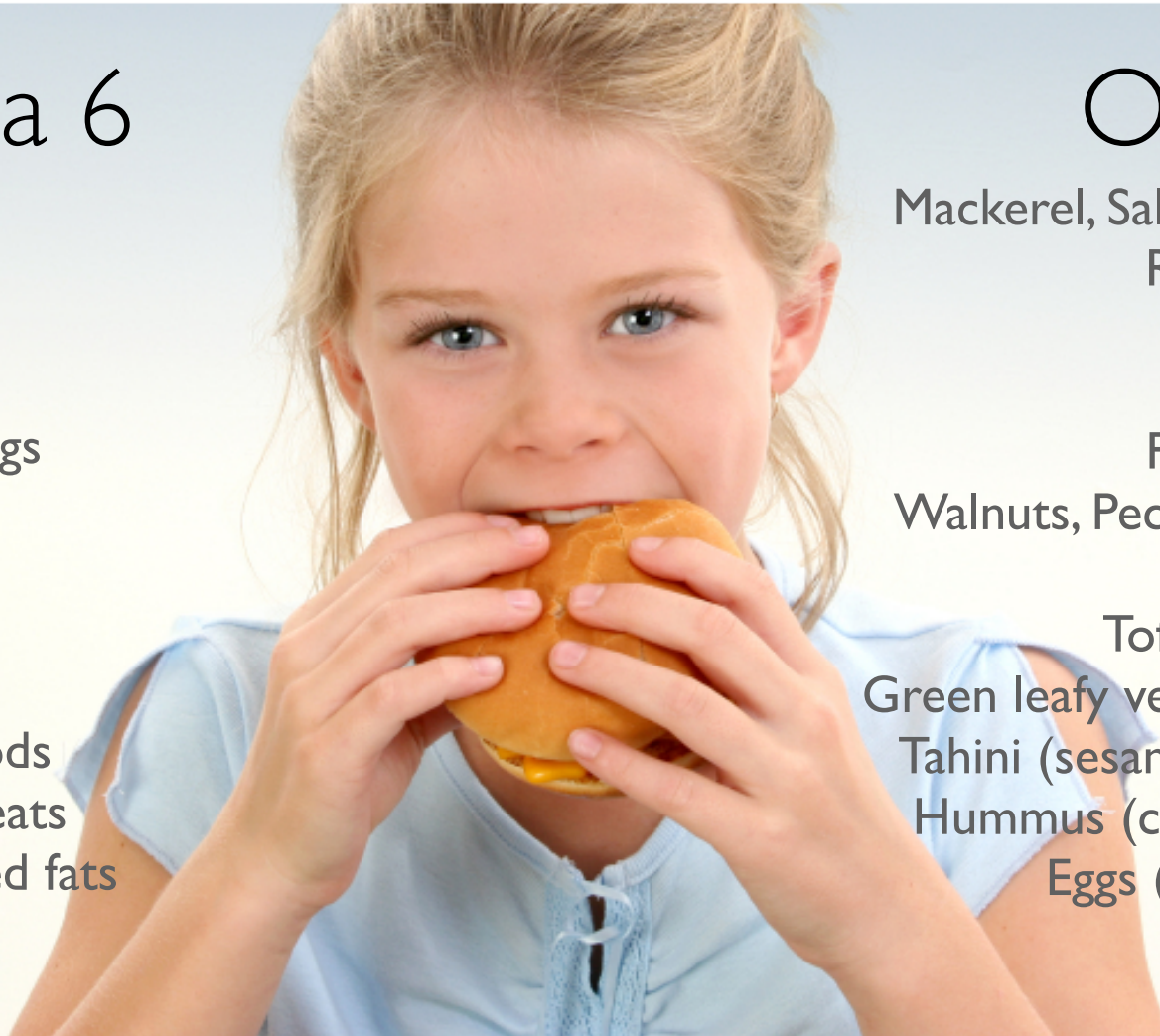


Omega 3

(Fish & Range Fed Stock)

Omega 6

Potato chips
Bread
Cookies
Crackers
Salad dressings
Margarine
School food
Fast Food
Snacks
Prepared foods
Grain fed meats
Hydrogenated fats



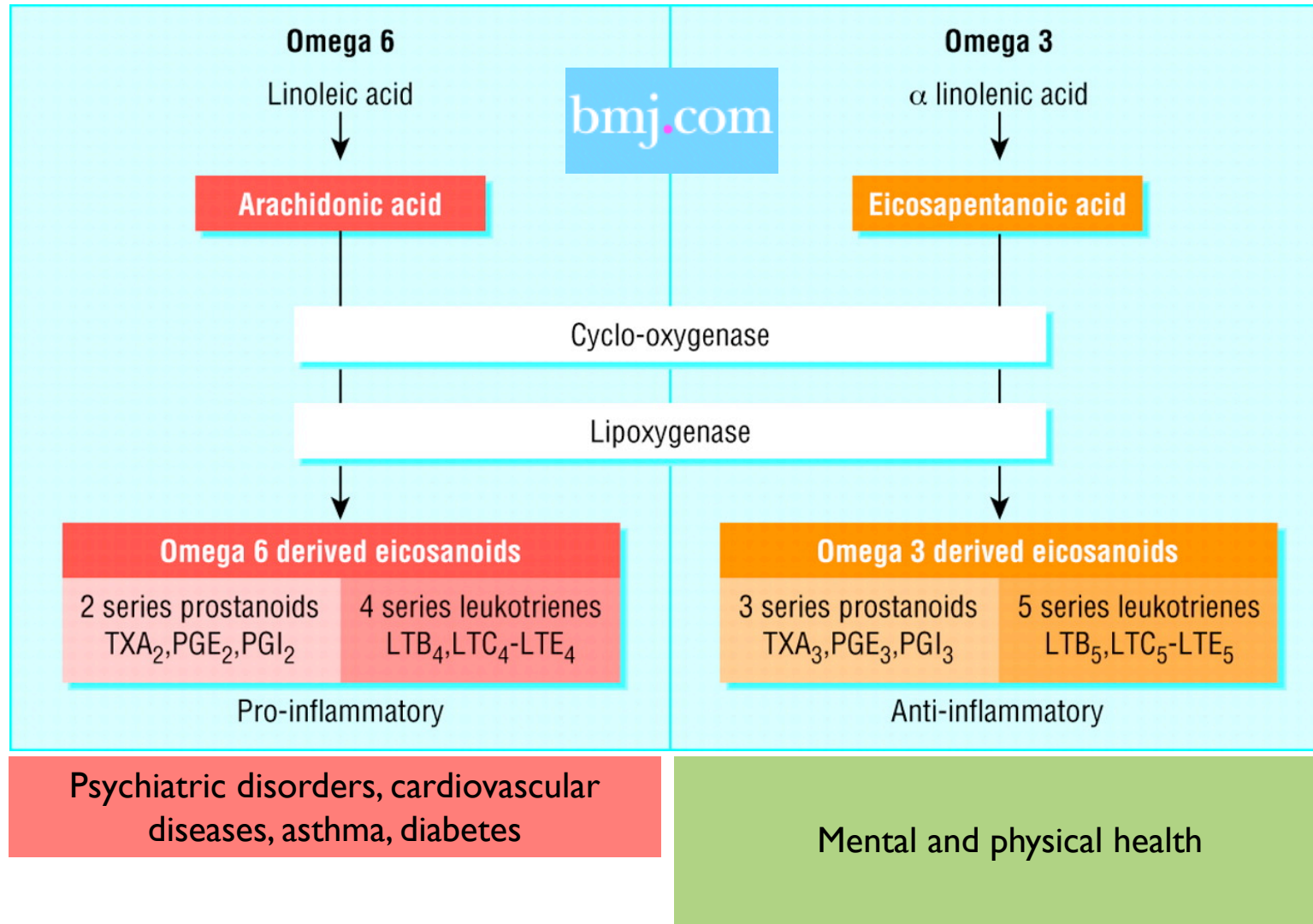
Omega 3

Mackerel, Salmon or herring
Range fed meats
Cod liver oil
Flaxseed oil
Flaxseed ground
Walnuts, Pecans, Brazil Nuts
Pumpkin seeds
Tofu (moderation)
Green leafy veggies (Spinach).
Tahini (sesame seed spread)
Hummus (chickpea spread)
Eggs (non-grain feed)

What do kids eat the most of today?

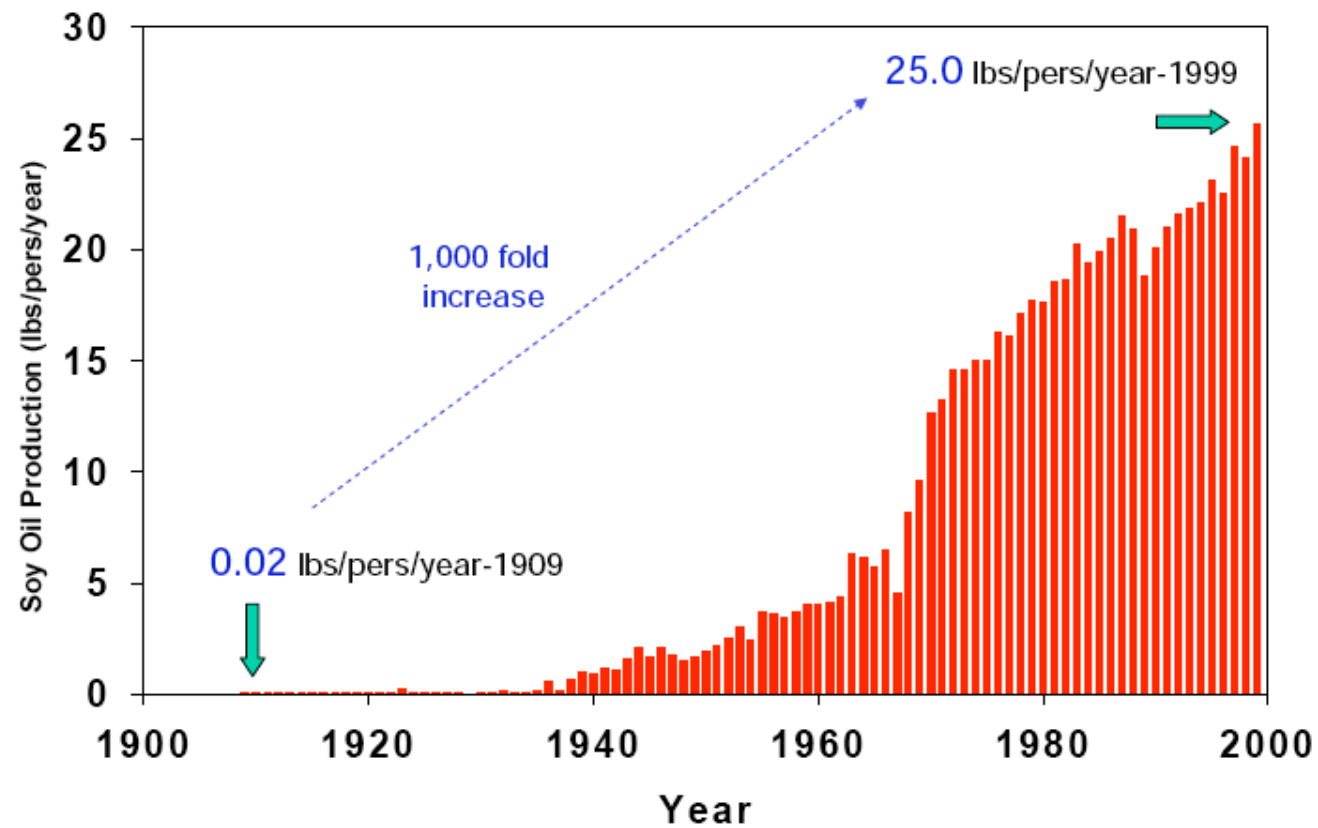
Omega 6: Soybean, cottonseed,
& corn oils

Omega 3: Fish and other
sources

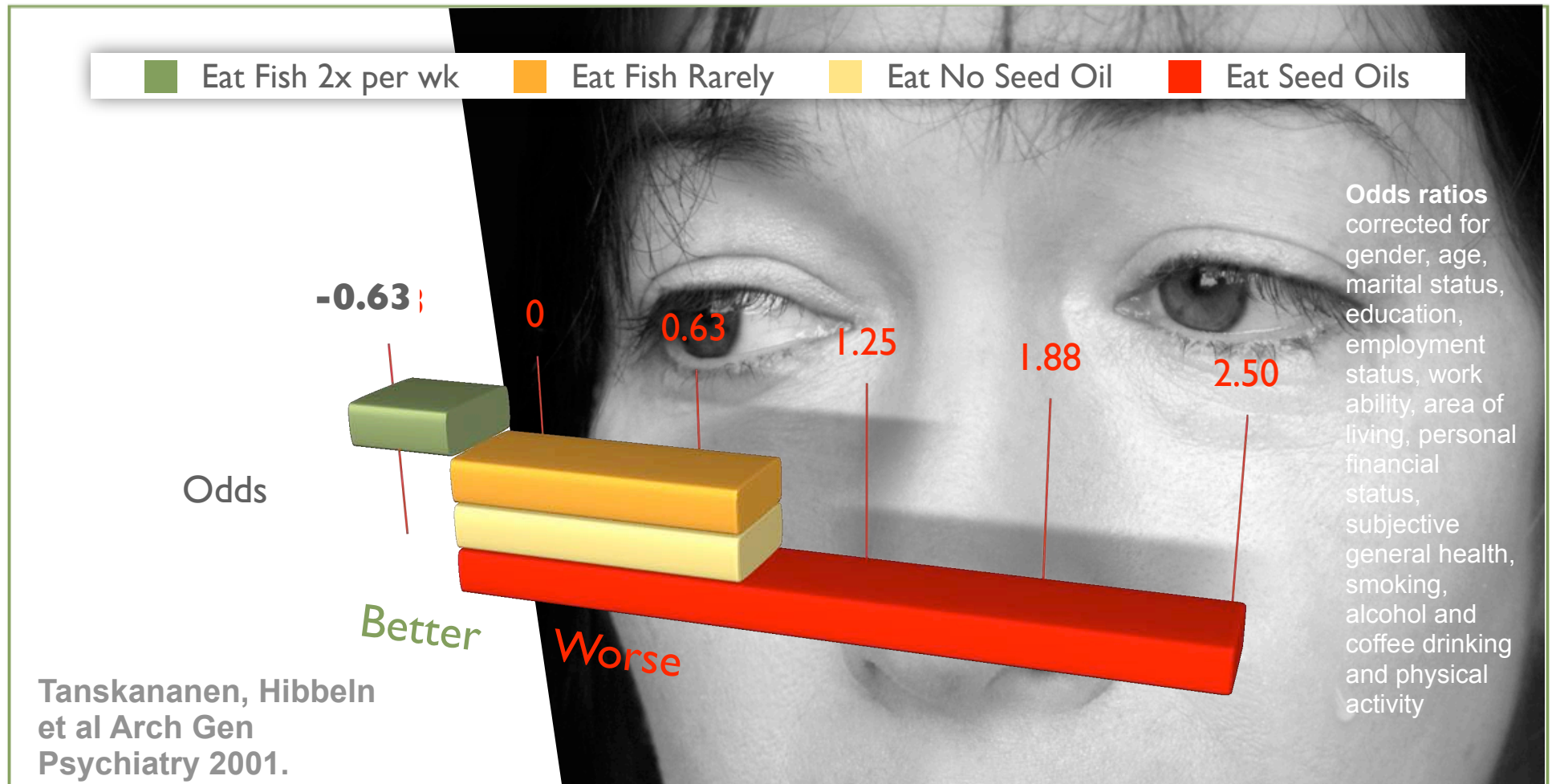


Din, J. N et al. BMJ 2004;328:30-35

Soy oil production for food consumption USA, 1909-1999

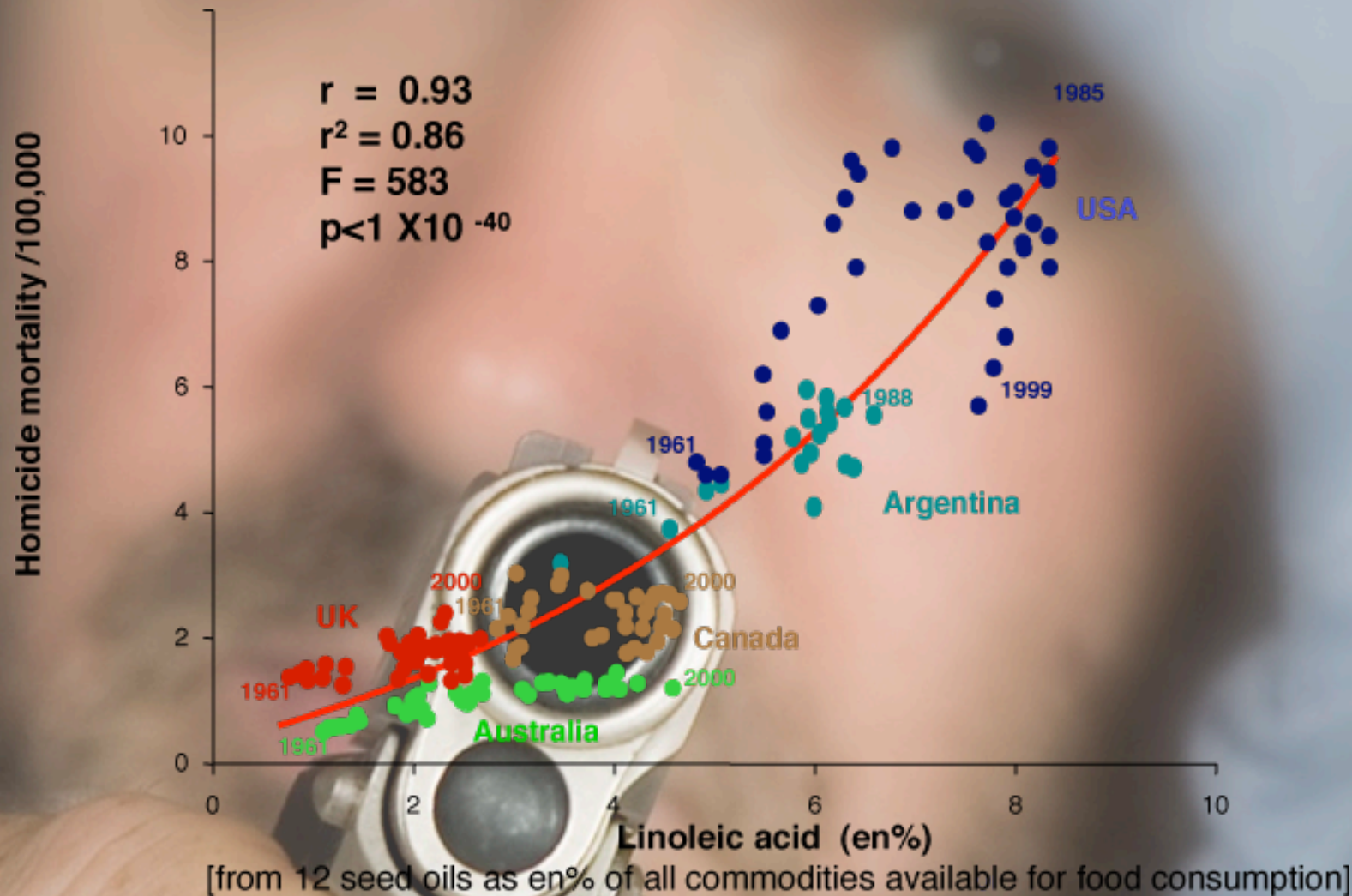


Impact on depression based on oil consumption



Homicide mortality and availability of linoleic acid (en%)

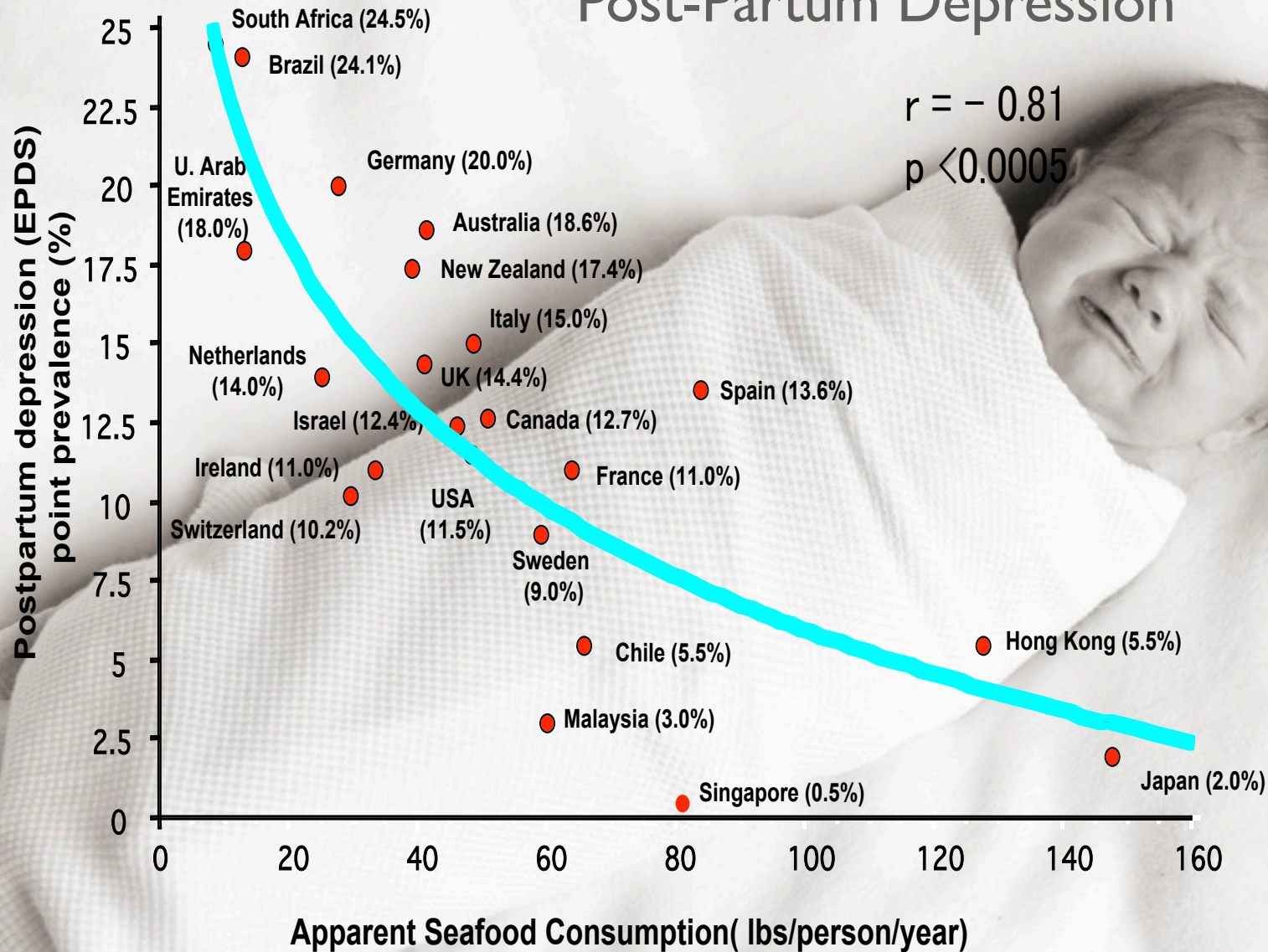
Combined **Australia**, **United Kingdom**, **Canada**
Argentina and **USA** data from 1961-2000



$$f=y_0+a*\exp(b*x) \quad y_0 = -1.98207 \quad a = 2.14258 \quad b = 0.203595$$

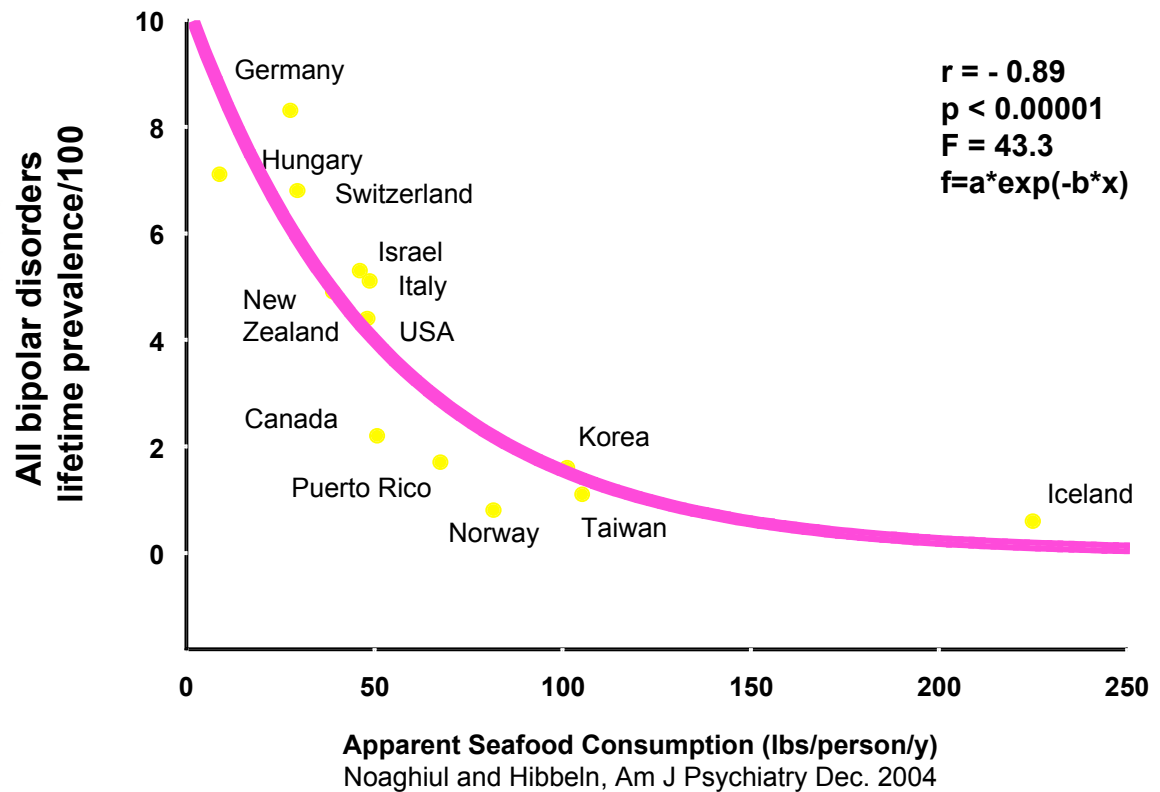
Hibbeln et al 2004

Post-Partum Depression



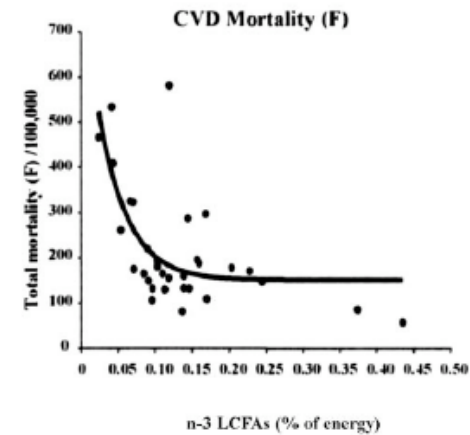
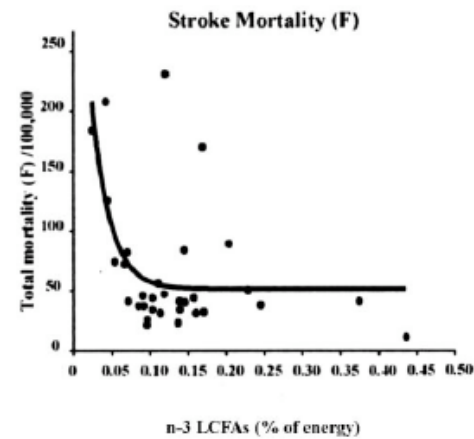
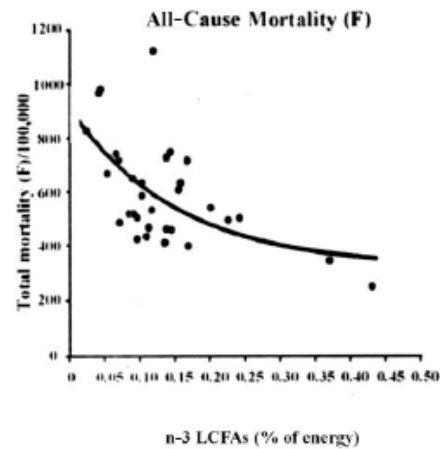
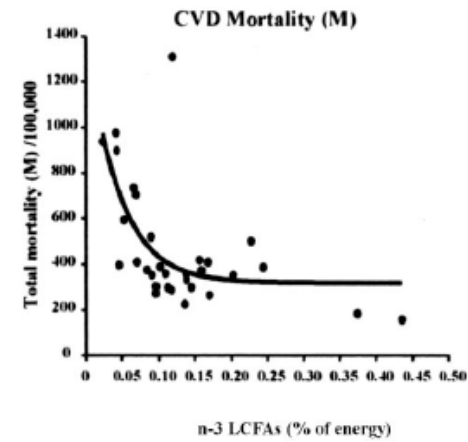
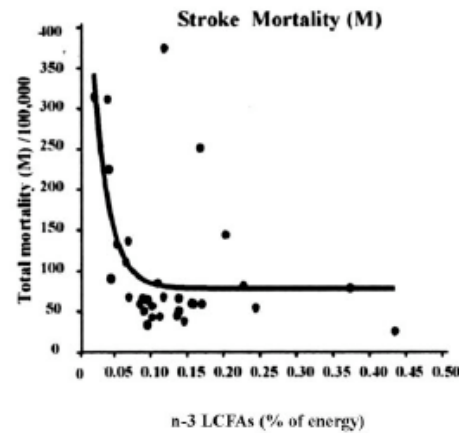
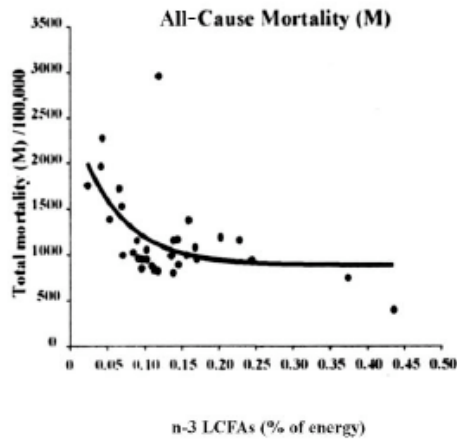
Hibbeln JR, J Affect Disorders, 2002

Bipolar Disorder & Diet



Omega-3 Consumption Mortality Reductions

Males

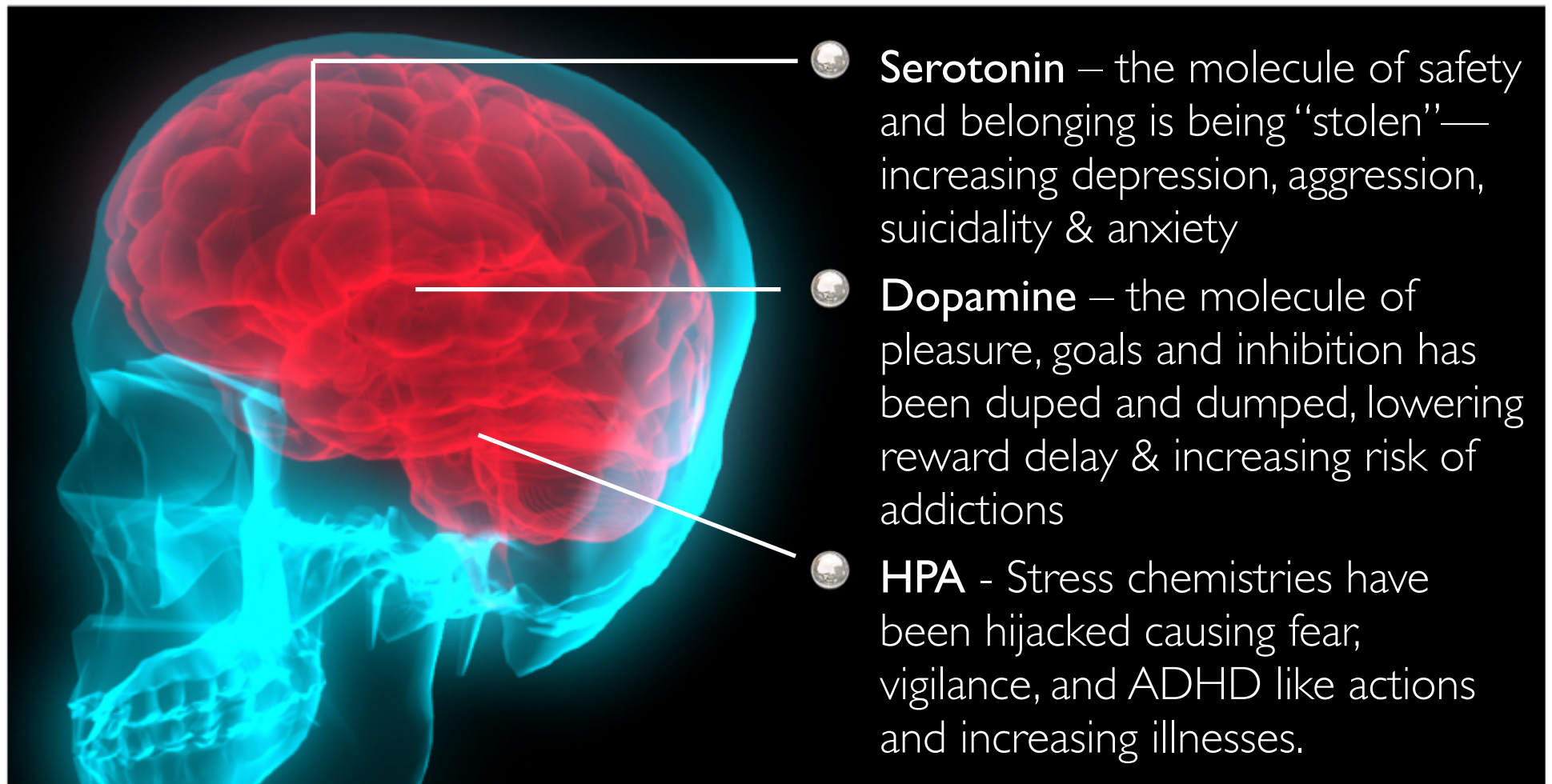


Females

Clear thinking our children and communities



Assault on brain chemistry



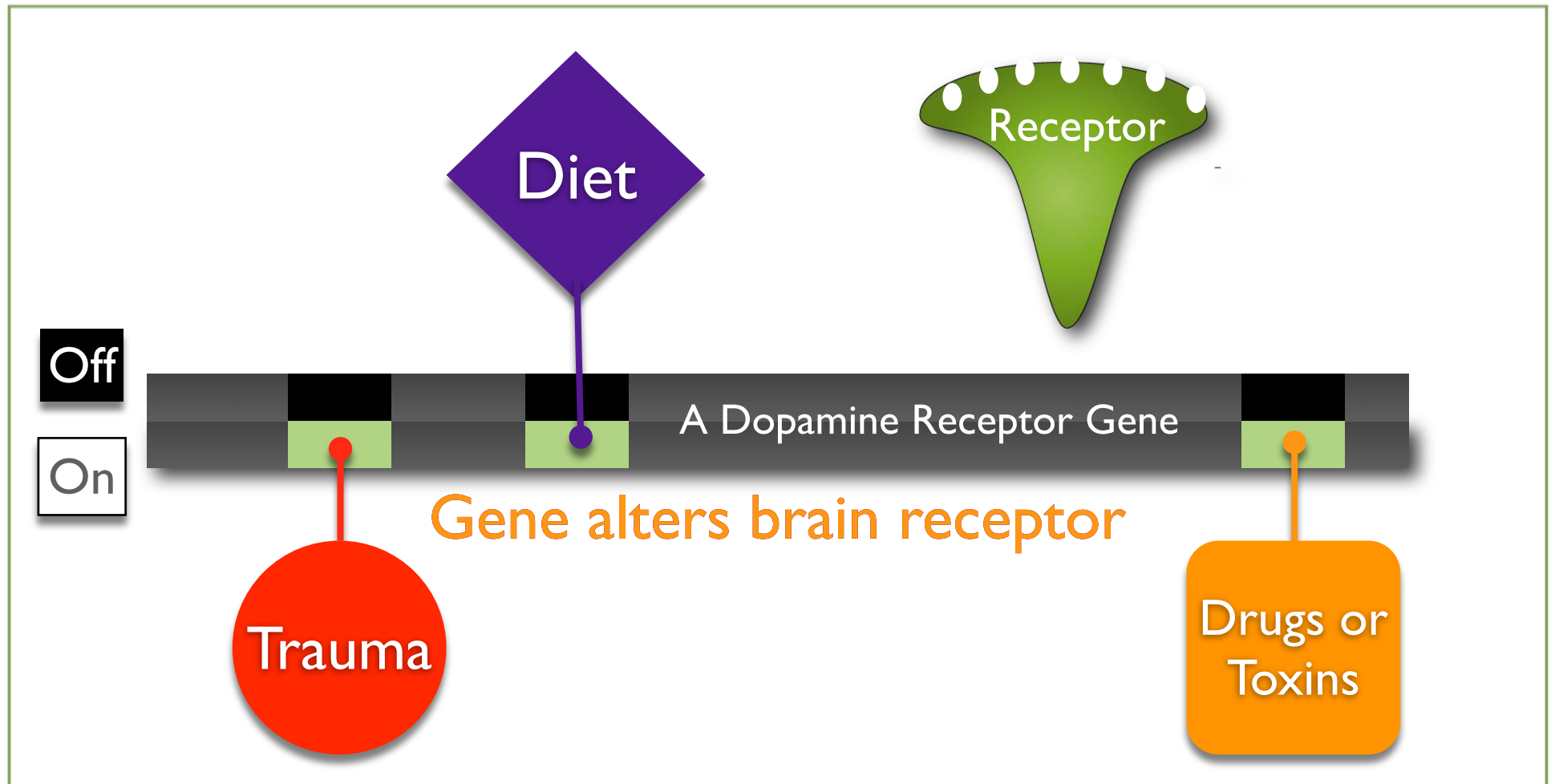
Using brain science to understand the past & future

- ▶ Social "rank" and perceived stress has a significant effect on dopamine (D2) receptor:
 - ▶ Loss of status **reduces** dopamine (D2) receptors.
 - ▶ Increased status **increases** dopamine (D2) receptors.
- ▶ With more D2 receptors, people are less likely to abuse drugs.

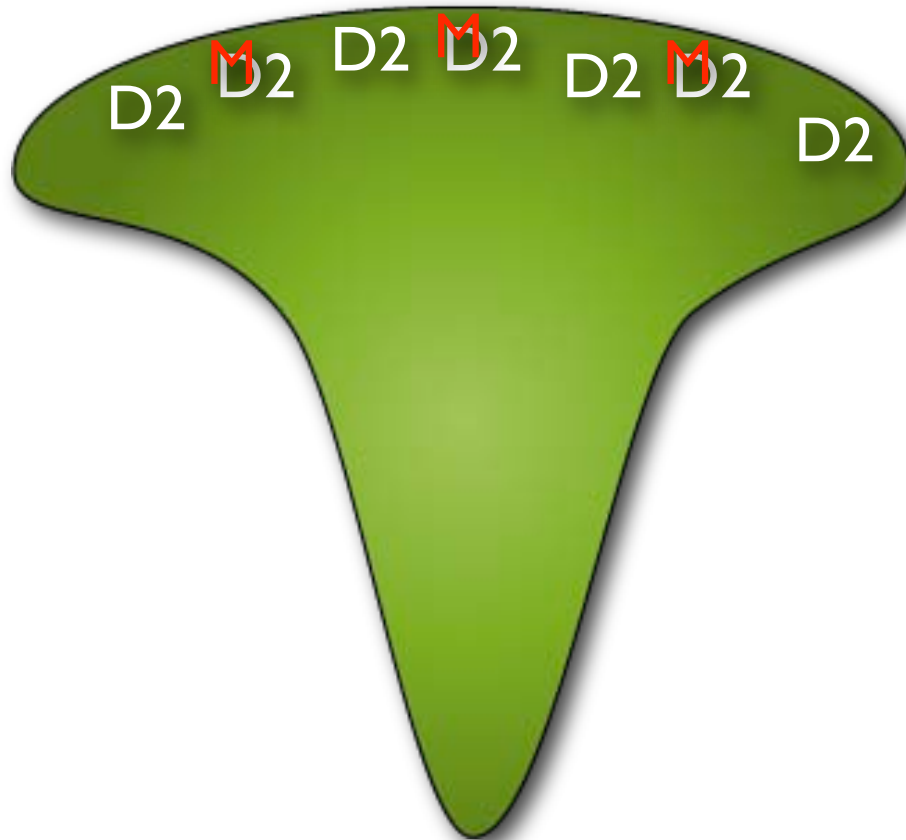
- ▶ Genes, brain chemistry, the brain, and behavior **adapt** to the world—especially to human caused threats.



Epigenesis: Experience changes gene



Receptor Change: New Adaptations

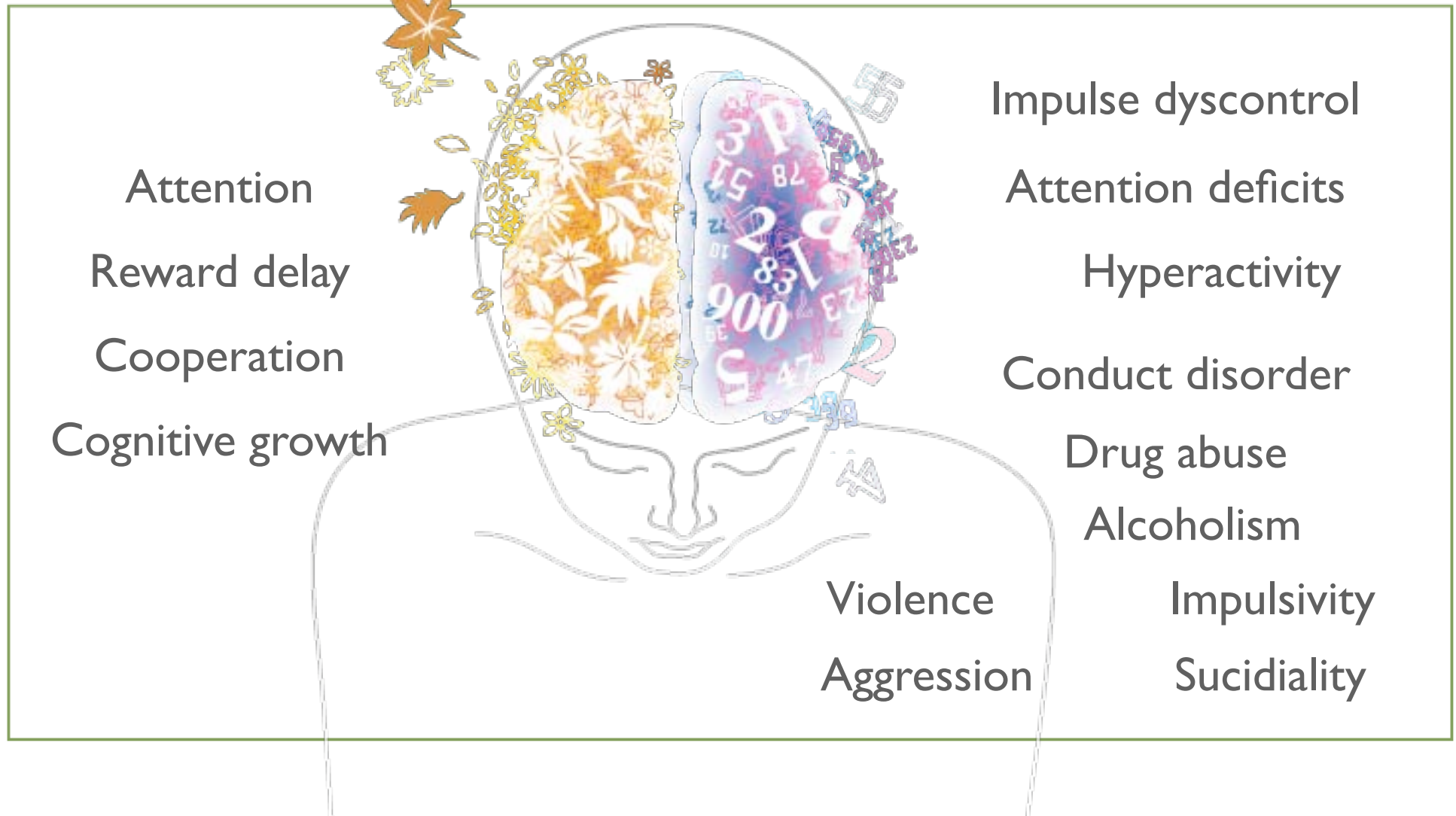


Dopamine Created
by Experience and
Diet

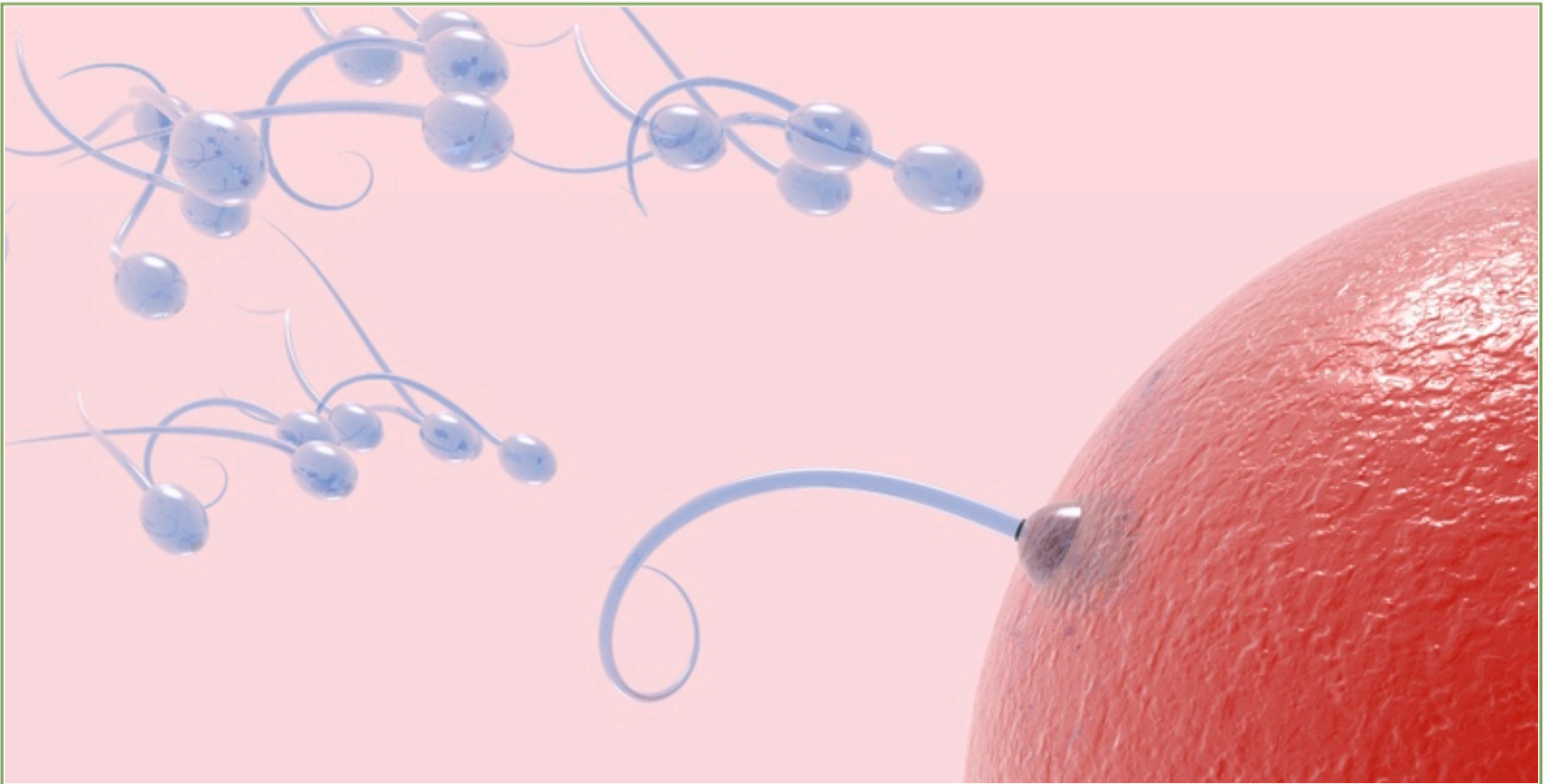
Dopamine Deleted
by Stress, Diet or
Toxins

Drugs Like Meth
Replace Dopamine

Genes change the brain & behavior



The changed gene change the sperm and egg



Changing the baby and the eggs or sperm in it



The
Past

The
Future



The Health of Community

Meth...
Child abuse...
Violence...
Corruption...
Dis-ease...

Loss



Yet hope floats...

Creating a future

Humans have the conscious capacity to create a future.

To do so, requires a creative leap of faith.



Heal the units influences

Antecedents:

Cultural cues,
media, laws,
policies, etc.

Reinforcements:

From peers, from
adults, conditioned
rewards

Culture

Behavior

Relational Frames:

Identities (US v.
Them), “Good” and
“Bad”, etc.

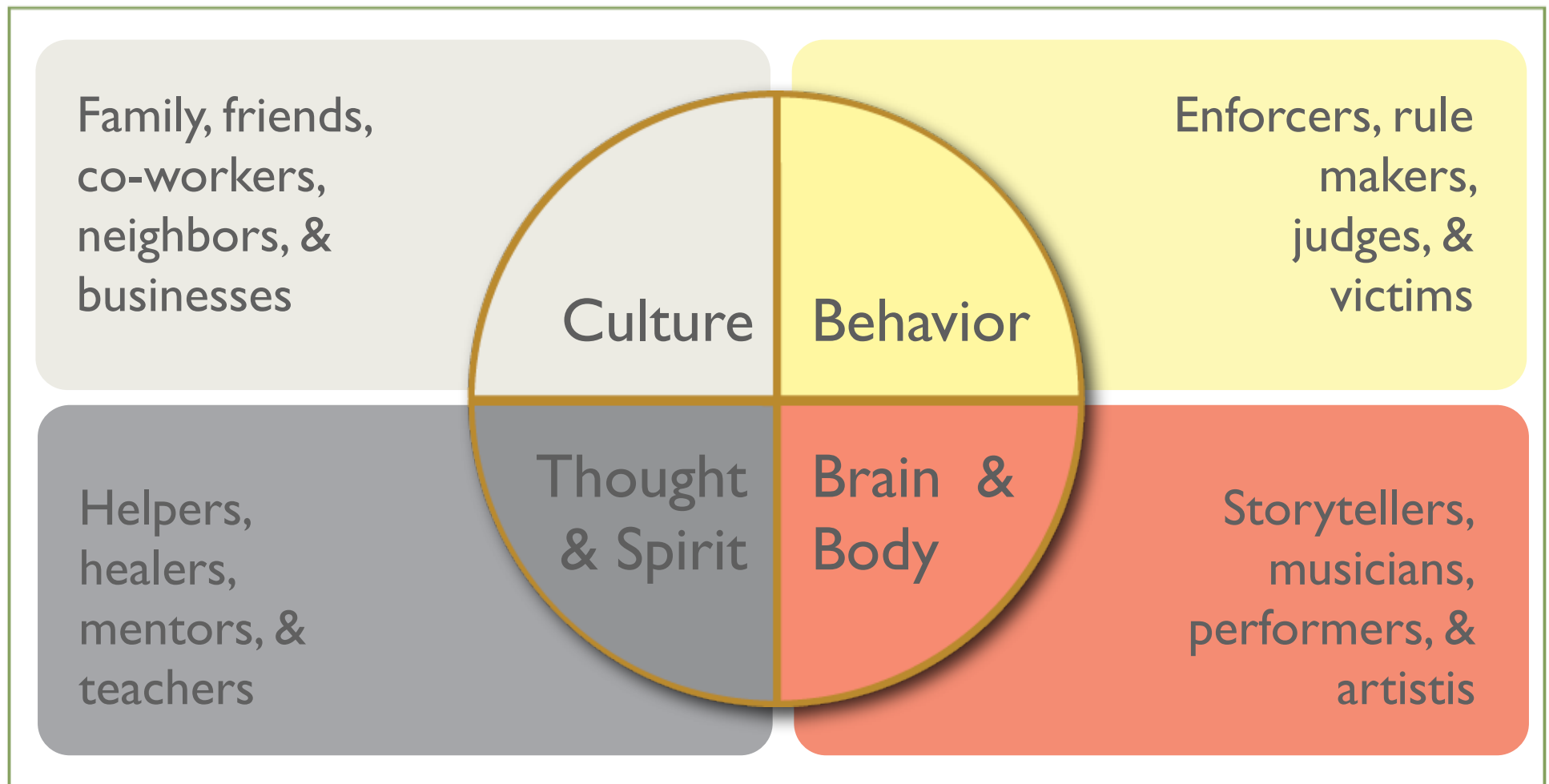
Thought
& Spirit

Brain &
Body

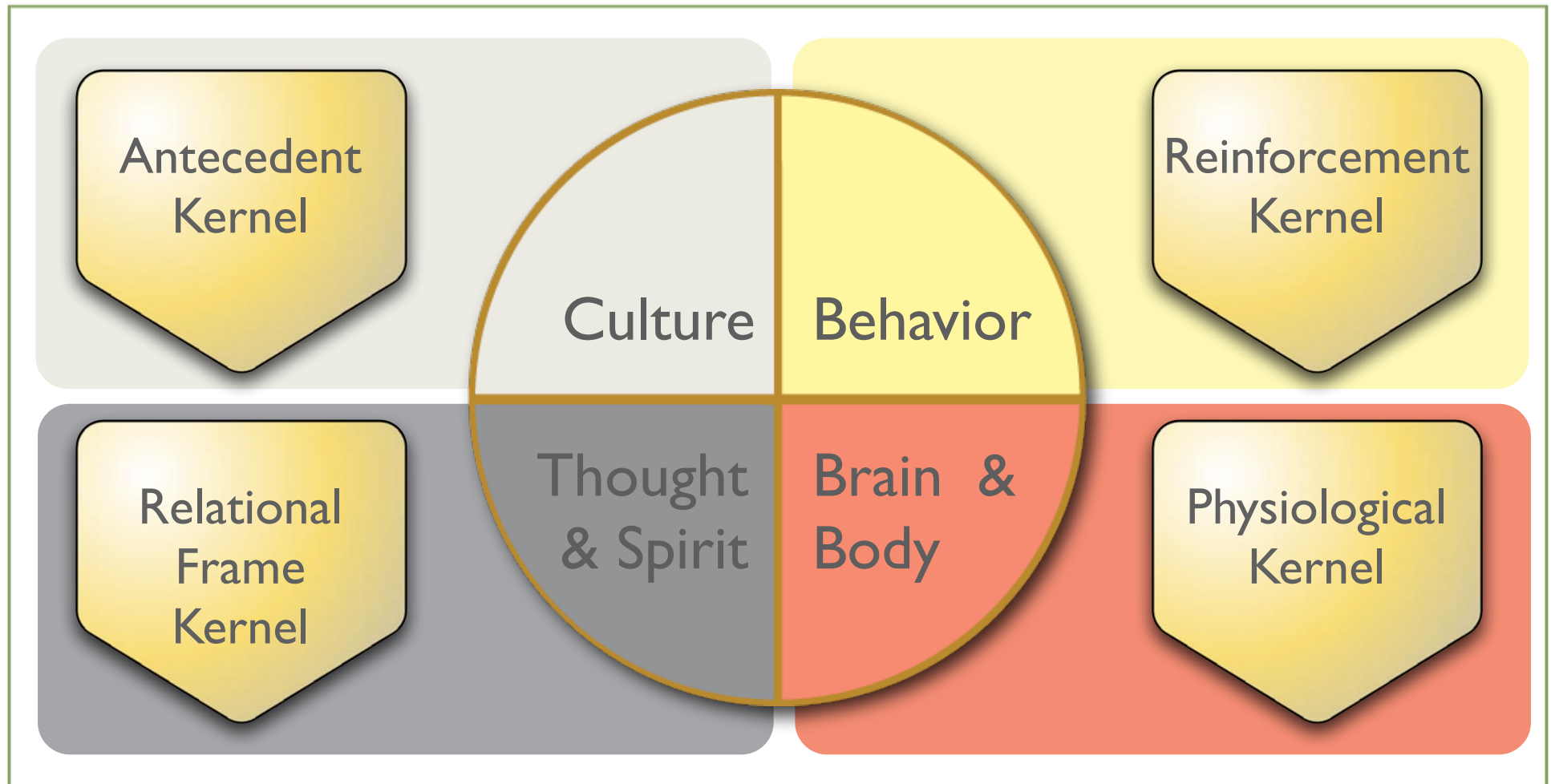
Physiological:

Food, activity, legal,
or illegal meds, etc.

Mobilize the influencers



Plant new seeds to heal

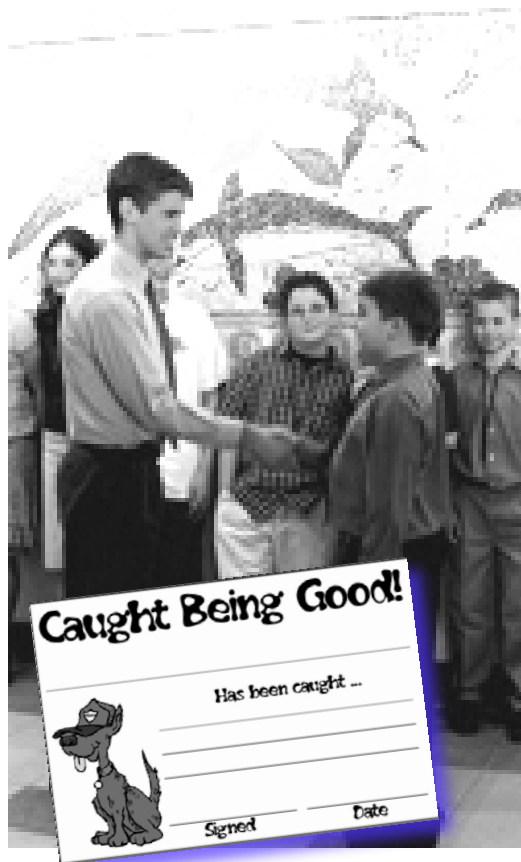


Evidence-based kernels

are fundamental units
of behavioral influence,
and Simple Gifts for
changing communities
to become healthy



Example of kernels in a prevention program



- **Seattle Social Development Study**
 - Adults instructed to greet and shake hands of five students NOT in their classroom each day.
 - Adults instructed to give out “caught you being good” tickets every day.
 - Results 10 years later.

Utility of kernels

ARTICLE

COMMUNITY-BASED PREVENTION USING SIMPLE, LOW-COST, EVIDENCE-BASED KERNELS AND BEHAVIOR VACCINES

Dennis D. Embry
PAXIS Institute

Embry, D.D., *Community-Based Prevention Using Simple, Low-Cost, Evidence-Based Kernels and Behavior Vaccines*. *Journal of Community Psychology*, 2004. **32**(5): p. 575.

- ▶ Replicated
- ▶ Simple to explain & use
- ▶ Scalable to populations
- ▶ Adaptable and flexible to contexts
- ▶ Produce fast results
- ▶ Robust to dose and fidelity
- ▶ Have multiple effects
- ▶ Can be added to enhance existing efforts

Four Types of Kernels

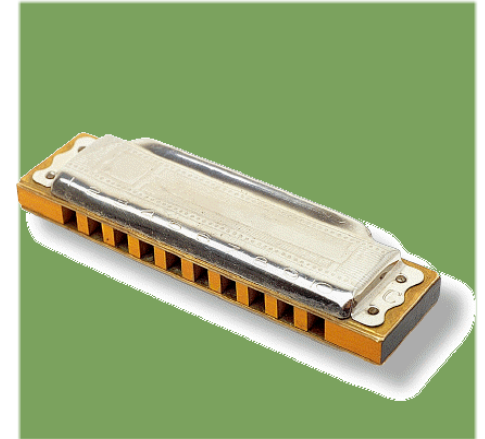
Antecedent
Kernel

Reinforcement
Kernel

Relational
Frame
Kernel

Physiological
Kernel

Planted kernels create a culture.



Antecedent
Kernel

Example Antecedents

PAX it

*Dear Mrs. Smith,
David paid
attention today and
did not disrupt
class. Please praise
him.*

Ms. Ramirez

Written
or
verbal
praise



Response
cost for
engaging
in action

Money
or
gambling
activity



Citation
or
punish-
ment



Reinforcement
Kernel

Example Reinforcement
(consequences)



“Support
our
troops.”

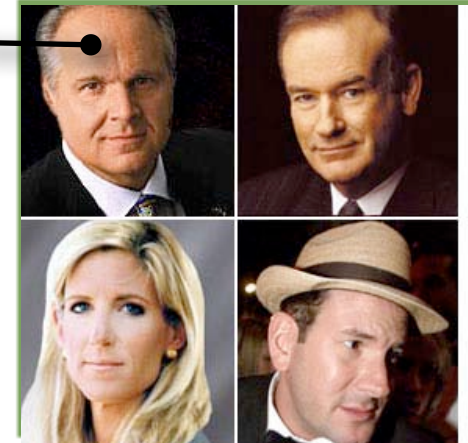


“They like
hip-hop
style.”

“What
would
Jesus
do?”

wwjd?

“That’s a
Liberal /
Conservative
position.”



Relational
Frame
Kernel

Example Relational Frames



Physical
activity



Fish oil,
chocolate
& other
foods

Prescription
Meds
or illegal
drugs



Warm
greeting with
touch



Physiological
Kernel

Example Physiological Kernels

Antecedent
Kernel



Relational
Frame
Kernel



Reinforcement
Kernel



Physiological
Kernel

Kernels—Simple Gifts—can be
applied to change communities

Antecedent kernel example

And you are using it now...



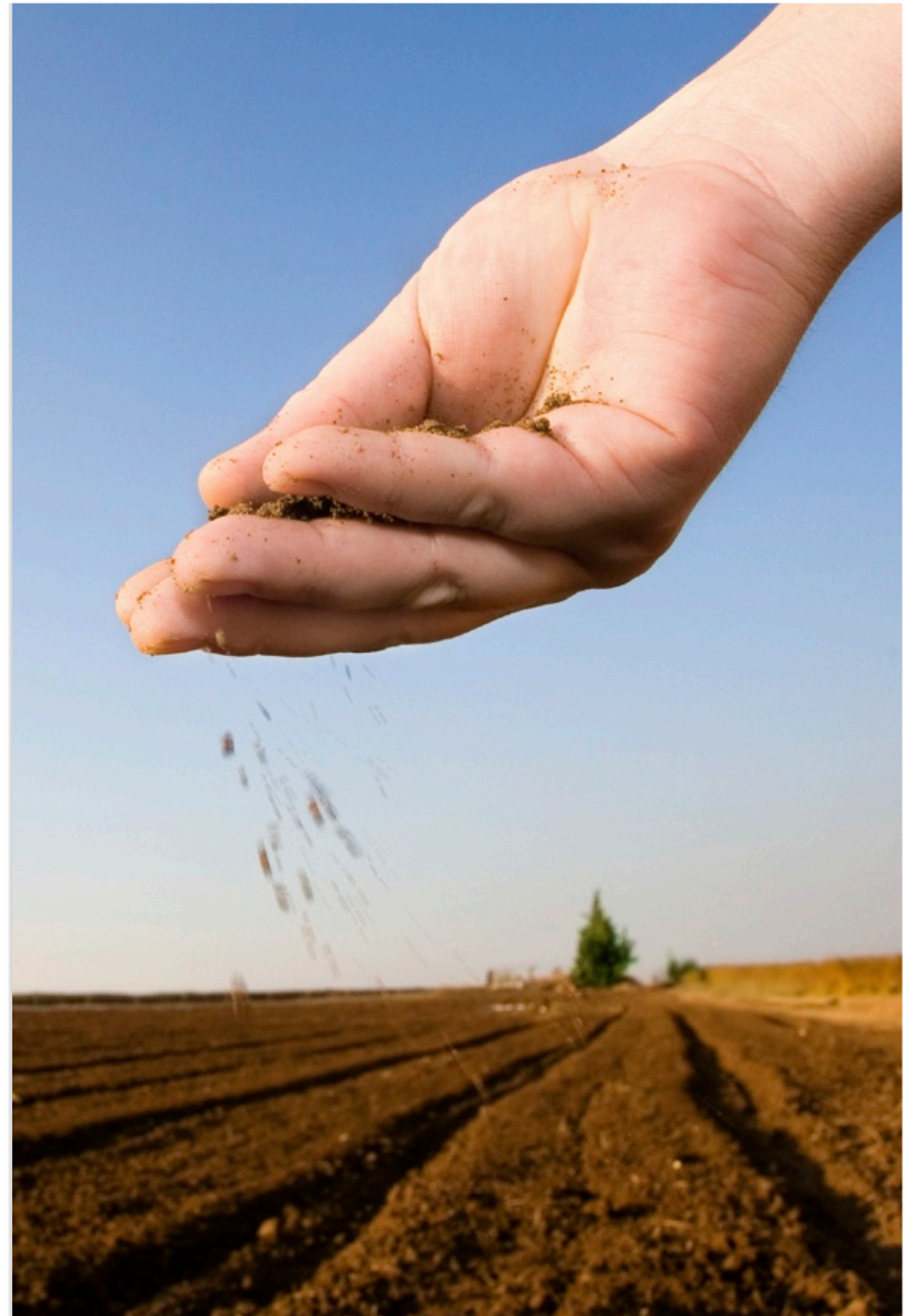
My vision, my invitation, my aim



“I see the possibility of conscious possibility of changing the future of children, of families, of communities, the country and the world. Join in re-aiming our collective efforts.”

Picking your kernels for planting

There are over 100 evidenced-based kernels you can plant for community-level change.



Antecedent Kernel

Planted, can
significantly

Reduce obesity

Increase academic achievement

Reduce ADHD

Reduce bullying and violence

Increase predictions of lifetime health



Reinforcement Kernel

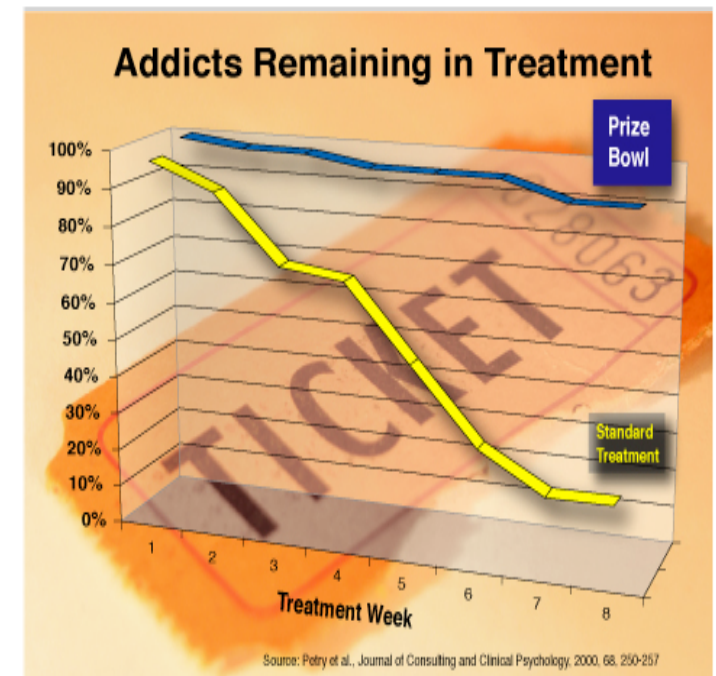
Planted, can
dramatically

Reduce Meth addiction inexpensively

Reduce other drugs use in adults & teens

Reduce alcohol, tobacco and drugs during
pregnancy

Improve completion of goals and healthy
living in teens and adults



Relational Frame Kernel

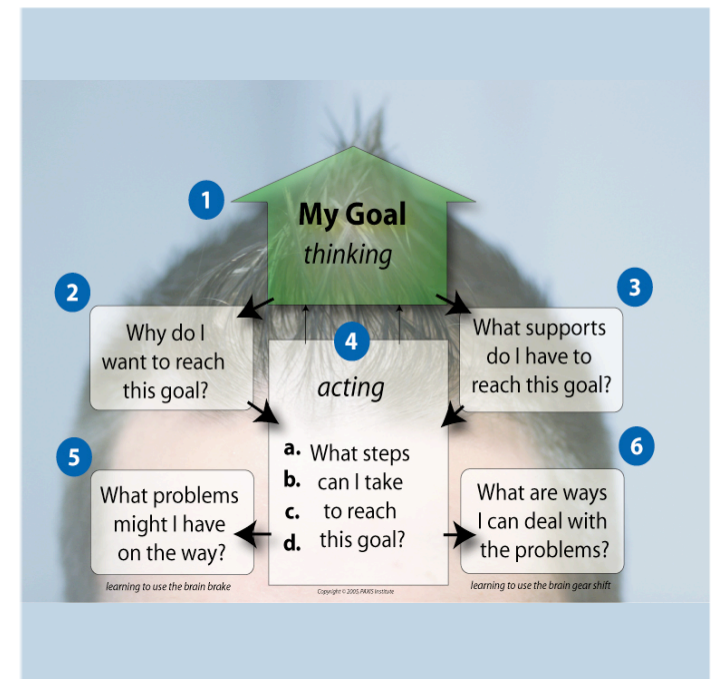
Planted, can
significantly

Increase achievement

Increase resiliency

Increase long-term goal attainment

Reduce alcohol, tobacco and other drug
use



Physiological Kernel

Planted, can
significantly

- Reduce post-partum depression
- Reduce homicide and suicide
- Reduce developmental disabilities
- Reduce diabetes and asthma
- Increase children's IQ
- Reduce cardio-vascular disease



Imagine that every tribe here
planted scores of kernels or
Simple Gifts and collaborated
on making the better...



Leveraging solutions

Everyone here worked to leverage solutions for change, to reduce common problems affecting our communities



Perhaps by using the **RE-AIM** formula

Efficacy



- Efficacy/Effectiveness is the impact of a strategy on important outcomes. This includes potential negative effects, quality of life, and costs

or increase in positive outcomes. Think of this of this measured ability to produce the change if used—from none to highly potent.

Higher **efficacy** X more **reach** = more **leverage**



- Side Effects

Be mindful that all strategies have negative effects that subtract from the good effects.

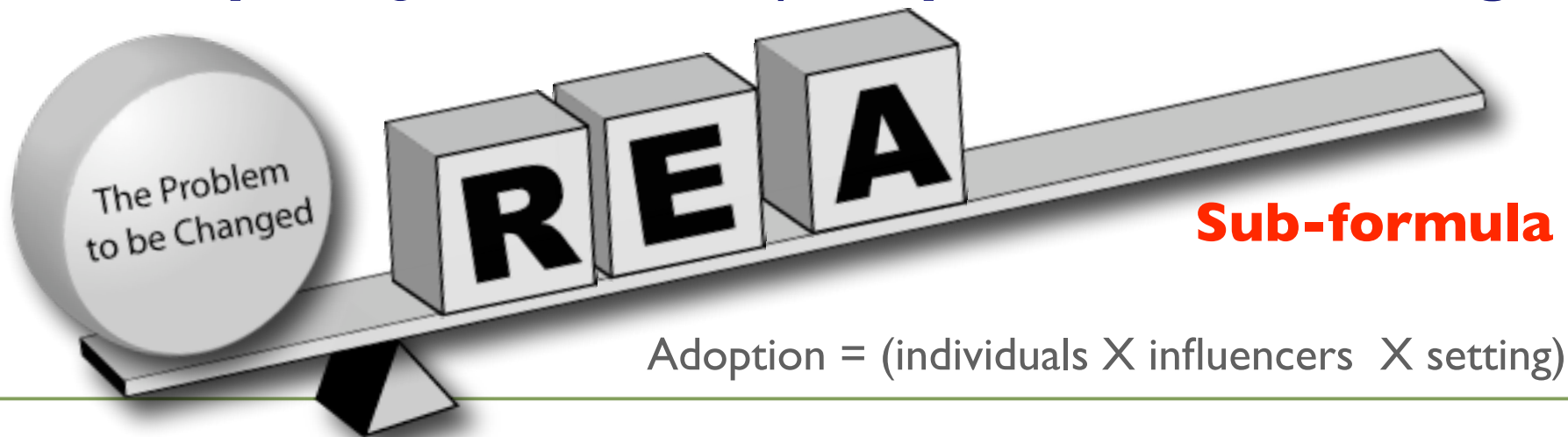
Adoption



- Adoption is the absolute number, proportion, and representativeness of people, settings and/or staff who are willing to offer a strategy.

Notice there can be multiple levels of people or settings who must adopt the strategy to achieve results.

Hi **efficacy** X large **reach** X many **adoptions** = more **leverage**



Implementation

- Implementation, at a setting level (home, clinic, office, business, etc), refers to how closely the user or agents (e.g., staff members) follow the

strategy that is recommended or proven. This includes consistency of delivery as intended and the time and cost of the program.

(efficacy X reach X adoptions) X robust implementation = Hi leverage



Maintenance

- Maintenance is the extent to which a strategy, program or policy becomes routine or stable organizationally.
- At the individual level, maintenance is the long-term effects on outcomes after 6 or more months after adoption and implementation.



Individuals are often nested in organizations.

Community Dashboard

Developmental perspective

- Prenates
- Infants
- young children
- Teens
- Adults

Weekly or 30-day indicators,
archival and new

Weekly or 30-day publicity

Multi-problem or Syndemics
approach embedded



Celebrate

Successes must be shared
We must create the open
spaces for the
future of all of
our children
for our mutual
survival





The historical wounds exists; let us
create the future for all our children.

Let us create council to select,
devise and share Simple Gifts
(kernels) for all our Native children
and communities in California



Breakout sessions will be designed to heal and create health communities

with proven evidence based
kernels for population groups of
our communities that reduce
Meth and related problems...

9 am
Adults



10:40 am
Children



1:30 p
Youth



Thank you...

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